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Editorial Snap Shots

STEPS OF PROGRESS IN THE STANDARDIZATION OF PLUMBING AND HEATING MATERIALS.

Progress is not only the law of life but also of trade. That this is so is affirmed by several steps of progress recently made in the plumbing and heating trades of this country. We refer to the standardization of plumbing and heating materials. It will probably not be amiss to recount some of the most noteworthy actions, which have been taken along this line during the last few months, because time spent in consideration and appreciation of what has been accomplished may be the means of spurring the leaders on to further endeavors for the betterment and the general welfare of the plumbing and heating trades.

To mention only what has happened so far in the year 1912, it is of vital interest to note that "The 1912 U. S. Standard Schedules of Standard Flanges for Steam Pressures up to 125 lb. per square inch, and of Extra Heavy Flanges for Extra Heavy Fittings and Valves for Steam Pressures from 125 to 250 lb. per square inch" went into effect May 1, 1912. These schedules were adopted by a committee of the National Association of Master Steam and Hot Water Fitters on October 25, 1911, and by the American Society of Heating and Ventilating Engineers on January 25, 1912, and they have also been adopted by the American Society of Mechanical Engineers. Every heating engineer and contractor knows the value of getting uniform supplies, and he can now secure these in this line, if he will take the trouble to specify that all flanged work shall be in accordance with "The 1912 U. S. Standard" Schedule of Standard Weight and Extra Heavy Flanged Fittings and Flanges.

The National Association of Brass Manufacturers adopted a uniform standard for basin cock shanks of 2¼ inch at its summer meeting in Detroit on June 11, 1912. This is another step in the right direction which will be a convenience to every plumber.

Exactly one month later, namely, on July 11, 1912, the National Committee of the Confederated Supply Associations at a meeting in Atlantic City, N. J., adopted what will be known as the "Naco" Standard for Extra Heavy Soil Pipe and Fittings, based on the report of the Standardization Committee of the above organization. That this also is a step of utmost importance and benefit to the plumbing trade is self-evident.

The men who have given their time and thought to the solving of these problems deserve the hearty appreciation of the trades benefitted by their labors.

That so much has been done in the space of a few months augurs well for the future. Much remains to be done. Many lines of plumbing and heating goods need standardizing. But a good beginning has been made, and here is hoping that the days may soon come, when the remaining problems shall be solved!

THE EVIL OF SUB-CONTRACTING.

We have for years been hammering away on the evil of sub-contracting. We have always maintained that sub-contracting in its relationship to plumbing and steam-fitting practices has no justification for its existence. It appeals only to the unscrupulous investor, owner, company or firm, who wants a building erected at a stated cost with the idea of selling it as soon as possible to some unsophisticated purchaser, who will have to bear the burden of its faulty construction as best he can. For these reasons it gave us great pleasure to hear what Retiring President Alfred C. Eynon said in his report to the thirtieth annual convention of the National Association of Master

Plumbers, at Salt Lake City. We would like to call the attention of all plumbing and heating contractors to his suggestion and advice for overcoming this evil. Mr. Eynon said:

"I earnestly recommend that we take concerted action to secure legislation for the separation of plumbing from the general contract. It should be a state issue, and handled by the states. In this connection I do not think it wise to adopt too drastic measures to compel our members to follow a certain line of action.

"Nationally, we should use our influence with members of Congress to have an act passed to compel the supervising architect to let the plumbing and heating separate from the balance of the work.

"For the information of our membership I suggest that the full text of the New York state act, providing for the segregation of all contracts for plumbing, drainage, heating and ventilating on public buildings, be published in the Proceedings of this Convention.

"If we are unable to resist this growing evil, we lose our identity as business men."

This is a serious question, and we commend Mr. Eynon's advice to the careful consideration of every reader of "Domestic Engineering."

METHODS EMPLOYED IN THAWING FROZEN WATER SERVICE PIPES.

How the Cost for This Service is Distributed in Eastern Cities.

Considerable variation in method exists between various cities in thawing out frozen water service pipes and in distributing the cost for this work. These related points form the subject of an interesting topical discussion by members of the New England Waterworks Association. The discussion is published in full in the "Journal" of the Association for June. We here abstract the following matter from the discussion:

On the question of payment the custom in Worcester, Mass., is to charge the consumers for the cost of thawing out a frozen main in cases where the freezing clearly started in the cellar. In many cases it is easy to determine that freezing started in the cellar since the flow of water in the pipe begins when the thawing operations have reached a point two or three feet beyond the cellar wall. Where the service freezes in the street the city assumes the cost of thawing it out. In cases where the house served is as much as 100 ft. from the street and the service is frozen under the lawn the custom in Worcester, as described by President Batchelder, of the Association, is to hold the consumer responsible if the freezing is on his premises. Services often are put in when the grade of the lawn has not been established. In such cases the department uses the best information available in fixing the depth at which the service is laid. Then if the property owner does not fill in his lawn as much as he had planned to do and the pipe is insufficiently covered to prevent it from freezing, the department is not held responsible. If the grade of the lawn is established at the time the service is put in, and freezing follows, the department assumes the cost of thawing, unless as above noted, the freezing begins in the cellar and works out through the cellar wall.

Speaking of the methods employed in thawing out frozen service in Boston in the recent severe winter, Mr. Frank McInnes, Division Engineer of the Sewer and Water Division, said:

"With approximately 100,000 services in Boston, we have had about 200 frozen. I have a list of deposit slips, and have to settle whether we shall pay the money back or keep it. In the majority of cases it is the same old problem as to where the freezing started—whether on the premises or in the street.

"With regard to the method of thawing the pipes out, I am satisfied that there is one best way, and that is to have your own electric plant, consisting of motor and generator of say 25-kw. capacity, which you can put on an electric truck or on a wagon and move from place to place. We have lost a large amount of time both with the a. c. and d. c. current in getting connections, grounds, etc., and have decided that we must have our own outfit. I have talked with some of the water-works supply men and have asked them to get up something and put it on the market before next winter.

"The next thing to electricity is steam under pressure, live steam carried right from the boiler into the pipe. In Boston we use small boilers delivering live steam under 4 or 5 lbs. pressure through a ⅜-in. lead pipe into a service or through a ⅝-in. pipe into a larger pipe.

"I can give the exact costs of work this year, but as it was all emergency work they are really of little value. A great deal of time was lost trying to make connections, in running secondary wires and in waiting; we were actually working but a small part of the time. With the alternating current we used a 50-kw. transformer and a water rheostat working often without a ground. We get our primary on one side connected and let the ground take care of itself. The entire cost of thawing, divided by the actual number of services thawed, including one elevator pipe which took a half day, amounted closely to $19. The total cost, divided by the total number of services we thawed and tried to thaw, losing a great deal of time on some without actual work, amounted to $14 each. With your own outfit the expense is only a matter of a dollar or two at the outside. The owner of the outfit which was working for us told me that in the adjoining town of Norwood he thawed twelve services at once, so the expense would naturally be a good deal less than our cost. What we paid is no criterion, for our frozen pipes were isolated, in all parts of the city."

At White Plains, N. Y., the Westchester Lighting Co. has made a business of thawing out frozen services, of which there have been a great many during the past winter. The rule in force by the water department places the responsibility for the house service entirely upon the householder, and the department has no interest in thawing out service pipes. If such pipes freeze, the householder or owner of the property must arrange for thawing them out. The charge for thawing, where there are no particular complications, was fixed in the early part of the season at $7.50 and was later increased to $10 per service. In Tarrytown, N. Y., the same company has charged $15 per service during the past winter. Special prices have been made for large jobs.

The Flush Valve and Its Application

By Harold L. Alt

Among the many plumbing accessories which are constantly being brought forth and put upon the market there is no recent improvement which seems to have met with greater favor than the water closet flush valve. It is being installed more and more in buildings of a public character and even in a great many residences of the better class. The $100,000,000 Pennsylvania Railroad Station and the $9,000,000 Municipal Building (two of New York's finest of the recent structures erected) have adopted the flush valve throughout except possibly in a few minor places. The new Woolworth structure has clung to the old tank ballcock-and-chain method of flushing and is a notable exception on this point to what seems to be the coming device, but this should by no means deter anyone from becoming familiar with the flush valve, its construction, where it **should** be used, where it **may** be used and when it **cannot** be used. Probably one reason why flush valves have not been more extensively adopted in the private house installations is because the ordinary house supply is usually of entirely too small a pipe size to supply a proper quantity of water instantaneously, hence the collecting closet tank requiring time to fill up and conserve the water until the time of operation arrives.

In order to appreciate the reasons for certain conditions governing the installation of flush valves, it is necessary to understand the valve itself; and, although it may seem to have a rather complicated interior and mechanism, in reality the moving parts are fewer, the action surer and its operation more simple, than the overhead tank, flush pipe, chain, ballcock, valve, etc., etc., which are found on the more familiar closet flush tank. Practical test has demonstrated that in this respect they are at least the equal of the closet flush tank and in many other ways they are greatly superior.

A brief description of the two general styles of flush valves is summed up in the following:

In Fig. 1 is shown a representation of the way some of the flush valves are designed, but it should be understood that, as this figure is not intended to cover any particular make of valve, some of the minor details and adjustments placed in the various valves of this type by their manufacturers are not shown for, while they vary slightly, they do not affect the main principles of operation. This type of valve consists of primarily two cylinders, C and D, one inside the other with a valve, F, operating up and down inside of the inner cylinder, D. The valve, F, is moved by the valve rod, H, rising up until the stop, G, raises the valve, F, up off of its seat, L, and the valve rod is caused to rise by the turning of the eccentric cam, M, which is attached to the operating handle, I. When the valve is installed with the water pressure turned on, it fills with water through the water inlet, the water penetrating upward between the inner and outer cylinders until it fills the space, B, from which it finds its way down into the inner cylinder through the opening, J. At this point then the direct water pressure is exerted on both inside and outside cylinders and of course presses the valve, F, down onto its seat keeping it tightly closed. This is the normal condition of the flush valve between flushes. Now in order to flush, the handle, I, is raised which causes the valve rod, H, to rise by the turning of the cam, M. If it were not for the pressure in the cylinder, D, pushing down on the top of the valve, F, the valve could be raised by being directly attached to the valve rod. This is however impossible owing both to the water pressure in, D, and to the fact that, F, in rising would have to drive the water in, D, out through the small opening, J, at the top which would take some time. To overcome this difficulty the valve rod, H, is extended up through the valve and an auxiliary or relief valve, E, located on the top of the main valve so as to provide for taking the water pressure off of the main valve

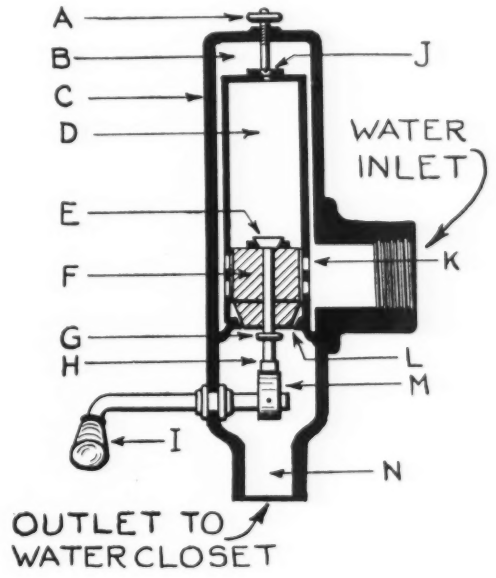


Fig. 1.

at the time it is desired to operate it and to also provide an avenue of escape for the water which would otherwise be practically confined in, D. Therefore, the first effect of the rising of the valve rod, H, is to open the relief valve, E, immediately after which (the rod continuing to rise as the handle is turned) the stop, G, strikes the bottom of the main valve, F, which is by this time perfectly free to move up, and lifts it off of its seat, L, so that the water coming in through the inlet will pass directly through the holes, K (which have been opened by the rising of the main valve, F,), and down through the valve seat, L, and on toward the closet through the outlet, N. The valve is now flushing and will continue to do so until the main valve is brought back onto its seat, L.

The main valve should return automatically to its seat and shut off the flow without outside interference or the farther use of the handle, I. This is accomplished in the following manner:

As soon as the handle is released, the cam, M, drops away from H, and H, naturally falls back toward its first position until stopped by the closing of the relief valve, E. This leaves the main valve hanging in the

upper part of D, with its valve, E, closed and water pouring in on the top of it through the inlet, J, which **always** remains open. This incoming water at once begins to push, F, downward resulting in, F, cutting off the supply coming in through the holes, K, and settling down in its normal position on its valve seat, L. The flush valve is now ready immediately for a second flush, and so on.

It can readily be seen from this that the more quickly, D, fills the sooner, F, will be forced down, and the shorter

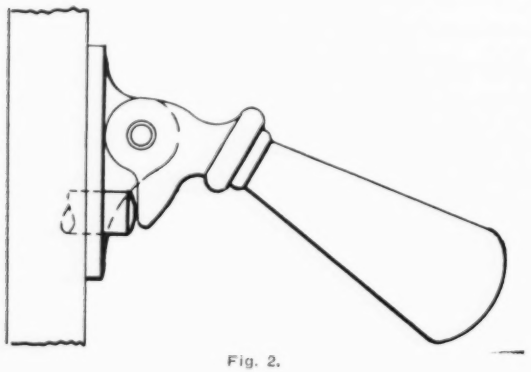


Fig. 2.

the flush. Therefore, the length of the flush may be adjusted simply by turning the screw, A, which opens or closes the inlet, J. To regulate the strength of the flush for different pressures, bands are sometimes placed so as to partially shut off the area of the holes, K, or a throttle valve used on the supply side of the water inlet.

Another type of flush valve which is an improvement over this and a simplification as well, is the kind installed in the Pennsylvania Station in New York City, where it has received the hardest kind of constant use and stood up well under it. This is the one cylinder type and if the two cylinder operation is thoroughly understood the single cylinder will be easy.

Suppose the valve in Fig. 1 to have its outer cylinder removed and the water connected directly to the inner cylinder through similar holes, K. Instead of bringing the water into the top of the cylinder at, J, a vertical leg with a ⅛ in. hole runs up the back of the cylinder and enters through the side near the top. This little ⅛ in. hole is intercepted by an adjusting screw similar to, A, but of course located in the leg on the side of the cylinder just above the water inlet. The valve, F, is changed so as to consist of two pistons connected by a rod and with the top piston of greater area than the bottom. To allow the escape of the water in the top of the cylinder the relief valve is changed to a by-pass running from the top of the cylinder to the outlet to the water closet and this by-pass is operated by a valve much the same style as, E, but located in the side of the cylinder and opened by direct pressure from a push button or by a push button operated by a lever handle.

The principle of the single cylinder valve differs in this detail; that the push button moves the relief valve only in the by-pass from, D, to, N, and after that all action is automatic. The elimination of pressure in, D, results in allowing the water pressure on the two pistons forming the valve, F, to become paramount and, as the upper piston is larger, its area and upward pressure is greater than the area and downward pressure on the lower piston so that the entire valve is raised by the excess water pressure exerted on the upper piston. This means that the main valve here is not operated by hand, but by water pressure. By the time the main valve has raised itself the push button has been released by the person operating the valve and the cylinder, D, begins to fill with water again, driving the main valve down just as in the two cylinder arrangement. It would seem from this that the single cylinder valve is a little less complicated and a little more automatic in its action than the other.

One thing that should be noted in regard to push buttons and flush valves is that, while the force required to operate the relief valve is not great, the area of the push button is so small as to create an excessive pressure per square inch on the end of the operator's finger which, although not actually painful, is not as good practice as it is to install the little operating lever as shown in Fig. 2. Almost every one (even in public toilets) will know enough to pull the lever, but may not operate the push button every time (especially if it works a trifle hard) without more education in this line.

It can readily be observed from this, that if a valve is set to flush properly at say 60 pounds' pressure, that at 40 pounds, the cylinder will take much longer to fill up and shut off the flush so that the flush would not only lack proper volume on account of the throttling that was necessary under the higher pressure, but would last a good deal longer than necessary because of the slower filling up of the chamber above the main valve. For this reason flush valves cannot be set to operate on direct pressure, no matter whether the supply pipe is big enough or not, if the pressure fluctuates much.

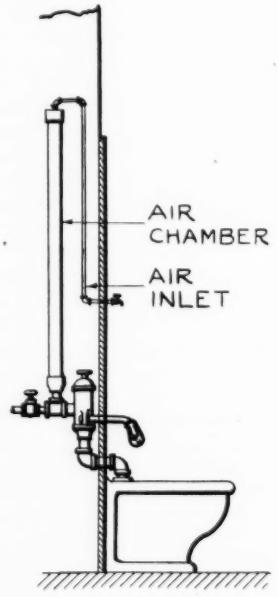


Fig. 3.

A separate flushing or house tank in the attic is about the most satisfactory arrangement for supplying water to these valves. This gives a constant pressure regardless of variations in the water supply, and unless this is done there is quite likely to be trouble. Where flush tanks are installed in the attic they should be designed to hold about seven gallons of water for each closet supply depending upon the estimated number that may be flushed at one time.

Where the water system is supplied from a stand pipe

or elevated reservoir so that it is constant under all ordinary conditions, it may sometimes be permissible to omit this tank, but such an installation is not to be too highly recommended.

This tank may also be eliminated in another way where the pressure is direct and unfluctuating, but the supply pipe too small to operate directly on the valve. This is by installing a pipe acting as an air chamber of 2½ or 3 in. in size and about three or four feet high, connected to the inlet of the flush valve on one side and to the cold water supply pipe on the other. This results in the cold water coming in to the air chamber under city pressure and filling this up the same as it would an ordinary air cushion until it compresses the air to a point where it counter-balances the water pressure. Upon operating the flush valve this air will then expand and push the water in the pipe down into the valve for a short time, thus helping out the shortage caused by the small water supply pipe. This scheme has the objection that the air cushion gradually becomes water-logged by the air being absorbed by the water rushing in and out and must have the air replenished in order to make it work properly. These air cushions must contain water enough to supply the flush valve about ten seconds continuously in order to give a proper flush and a typical view of one is shown in Fig. 3. For the plumber who wishes to install a first-class valve system, the attic house tank is the only reliable means of supplying them with the proper water supply, regardless of pressure fluctuation and the size of the house connections in the street; this is only subject to the one disadvantage of being unable to operate fixtures on the same floor with the flush tank. Fig. 4 shows an isometric diagram of a very neat flush valve system recently installed in one of the better class of residences on Long Island and also the fixtures on the third floor which had to be supplied by flush tanks on the direct system, owing to the fact that the house tank was on the same level with them.

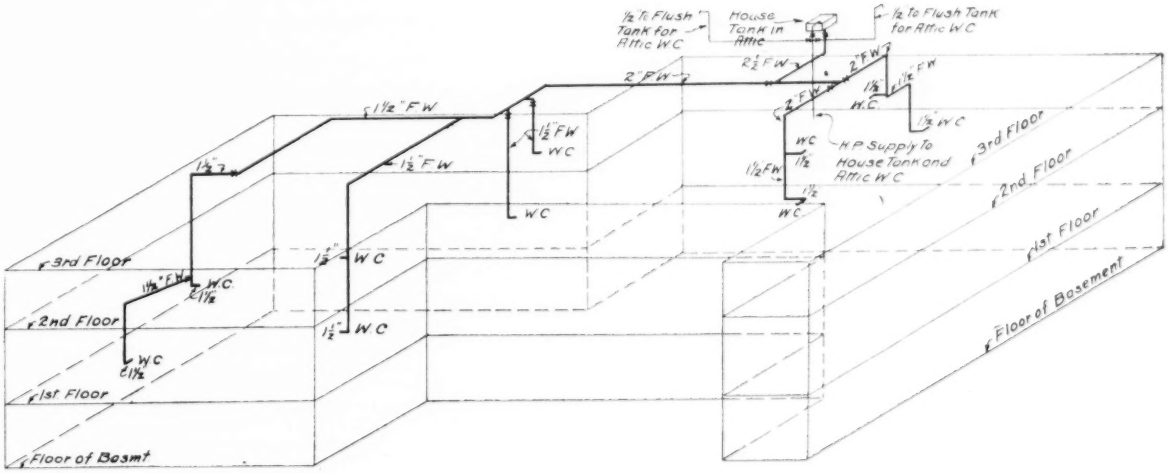


Fig. 4.

Deceitful Appearances.

"How fat and well your little boy looks."

"Ah, you should never judge from appearances. He's got a gumboil on one side of his face and he has been stung by a wasp on the other."—"The Pathfinder."

WATER FROM A DRAINPIPE LEAK ABSORBED WITH BRICK.

An emergency call to repair a leak in the drainpipe under the bathroom floor of a fine residence, came to our shop just as we were leaving on Saturday evening writes C. H. Bierly, of Zanesville, O., in "Popular Mechanics." Upon examination it was found that a permanent repair could not be made without putting in a new piece of lead pipe and wiping at least two joints.

We decided to try to leave the job if possible until the next workday. The leak was closed as much as possible by hammering the metal, but we could not close the aperture to keep it from leaking. The drops were noted and it was estimated that a pint would leak out in about 12 hours. As there was a space only about 4½ in. between the pipe and plaster and an opening in the floor, 4 by 12 in. in size, it was out of the question to get a pan large enough under the leak to hold the water.

When looking around in the basement we found a pan, 1 in. deep and 9 by 12 in. in size, also some dry soft brick. We placed the pan on the plaster and the brick in the pan. For two days the brick absorbed the water as fast as it dropped from the leak. This method can be used by plumbers in many places.

Keeping at It.

The constant drip of water
  Wears away the hardest stone;
And the constant gnaw of Towser
  Masticates the toughest bone;
And the constant, cooing lover
  Carries off the blushing maid;
And the constant advertiser
  Is the one that gets the trade.—Anon.

Her Gentle Hint.

Borem—Some one must have been joking Miss Suburbs about me and told her I owned the street railway system here.

Porem—What makes you think so?

Borem—Why, I was out to call on her last night, and every time she heard a car she said: "There comes your car, Mr. Borem."—Judge.

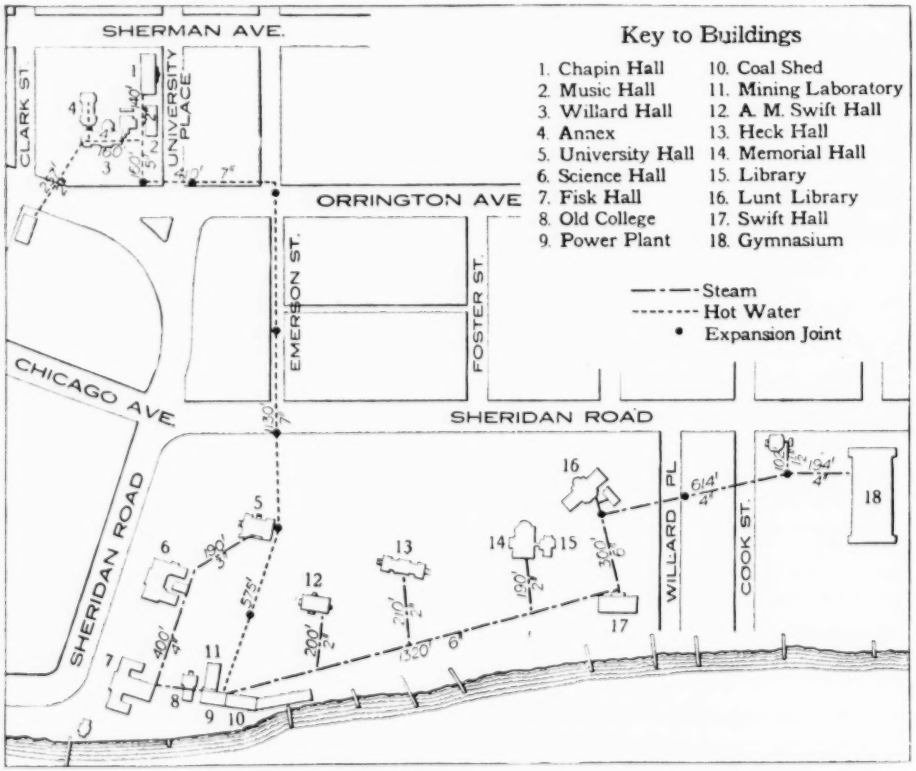
Heating and Ventilating the Northwestern University Buildings*

By J. M. Stannard

The heating and ventilating of the Northwestern University buildings, at Evanston, Ill., are accomplished by hot-water forced circulation, and direct and indirect steam plants under both vacuum and gravity methods. The accompanying map shows the various buildings with the method of heating in each, the location of power plant and the size and location of feed mains.

The boiler plant consists of six boilers, four for the generation of steam and two for the reheating of the hot water. Two of the steam boilers are of the horizontal return tubular type, size 72 in. by 18 ft., each rated 150 hp., and having grates 5 x 6 ft. The other two steam boilers are Sterling water-tube boilers, each rated at 250 hp., and having grates 8 x 6 ft. The two boilers for the hot-water heat are of the horizontal return tubular type, size 66 in. x 16 ft., each rated 125 hp., and having a grate surface 5 x 5 ft. The water-tube boilers are equipped with Green traveling chain grates and the four fire tube type are hand fired. The steam boilers are fed with water from a 600-hp. Cochrane open feed-water heater by two duplicate Worthington duplex 6 x 4 x 6-in. pumps.

During the more moderate cold weather only one of the hot water boilers is fired for the reheating of water, and two of the boilers are fired for the generation of steam. The steam boilers besides furnishing steam to the radiation also supply steam for the operation of circulating and vacuum pumps and one fan engine, which drives the fan for the induced draft system, as this method is used in the plant rather than natural draft. The fan for induced draft is of the Sturtevant make. It is 72 in. in diameter, and is driven at an average of 280 r. p. m. by a 10-hp. engine, direct connected to it. Coal and ashes are handled by a hand car conveyor.



Map of Buildings, Northwestern University, Evanston, Ill.

For the circulation of the hot water there are installed two Marsh single-cylinder double-acting circulating pumps, size 10 x 12 x 12 in., each having a theoretical capacity of 5.87 gal. per single stroke. Both pumps are equipped with Hill pump valves to reduce slippage to a minimum. These pumps are equipped with modern revolution counters so that an accurate record of the water pumped may be kept. There is one large closed heater having 396 sq. ft. of heating surface made up of brass tubes. This heater is used in addition to the two hand-fired boilers for reheating the circulation water for the hot-water system. This heater was installed to utilize the exhaust steam from the various pumps and stoker

*Read at the semi-annual meeting of the American Society of Heating and Ventilating Engineers, held at Detroit, Mich., July 11, 12 and 13, 1912. This paper is based on a committee report presented to the Illinois Chapter by J. M. Stannard, E. F. Capron, Robert A. Widdicombe and Charles F. Newport.

and fan engines. In this manner no exhaust steam whatever is wasted.

Three Marsh vacuum pumps, one size 8 x 12 x 12 in., and the two each 5 x 6½ x 10 in., are installed in the pump room and are used for holding vacuum on the steam-heating return lines and for handling the condensation from this system.

The hot-water system is equipped with a complete set of recording thermometers which show temperatures of outgoing and return water and outside temperature. In addition to the recording instruments there are regular thermometers on the heater and on the return line.

The steam-heating system consists principally of direct radiation supplemented with indirect in three of the larger buildings. The indirect radiation is for ventilating purposes, there being sufficient direct radiation installed for heating only. Steam is generated in the boilers at a pressure of 80 lb., and is reduced in the power plant to 40 lb., at which pressure it is distributed to the

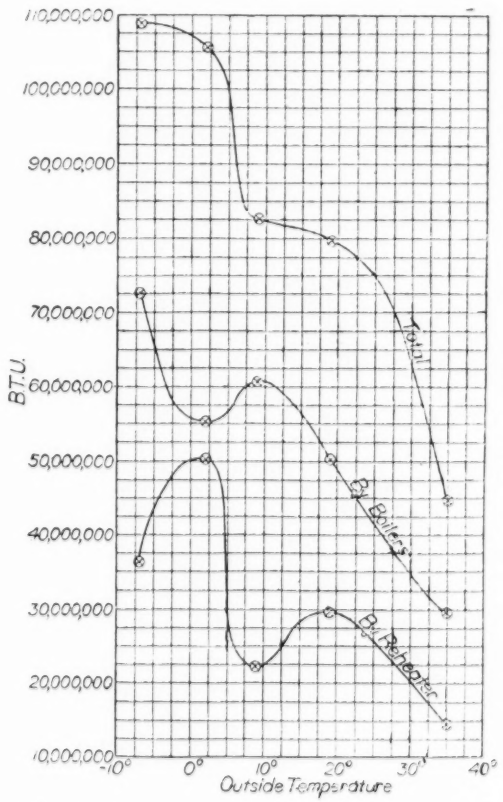


Chart Showing Amount of Heat Added to the Hot Water System in 24 Hours.

various buildings, twelve in number. One to 5 lb. pressure is carried in the direct radiation and blast coils as weather conditions require, and it is maintained by proper size reducing valves located in each individual building. Belvac thermofier float-type vacuum traps are applied to both direct and indirect radiation in two of the buildings, Swift Engineering Hall and Patton Gymnasium.

The pumps at power plant maintain a vacuum averaging about 10 in., which drops to 2 to 3 in. at the point where the returns leave the most distant buildings. The separate return lines are connected into two return mains which lead back to the power plant and are connected through settling chambers to the vacuum pumps in the usual manner. The condensation is then delivered by the vacuum pumps to a receiving tank from which it is delivered by gravity to a feed-water heater and from there is taken by the boiler feed pump and returned to the boilers.

The buildings on the forced circulation hot-water sys-

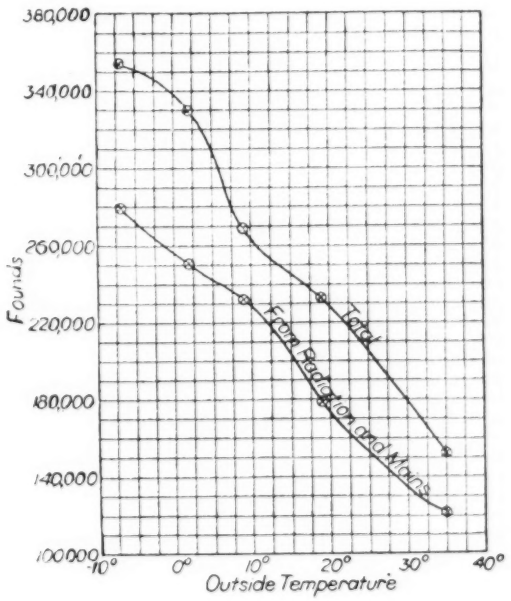


Chart Showing Condensation in the Steam System in 24 Hours

tem are heated with direct radiation only. Temperatures and volume of circulation are regulated from the power plant according to the accompanying temperature chart.

The supply and return mains on the hot-water system are 7 in. in size to a point midway between Emerson street and University place; 5 in. from this point to the manhole at the Music Hall, running 4 in. into Willard Hall and 2 in. to Pearson Hall, with a 2-in. line to Chapin Hall. These lines are run in a special conduit, the bottom of which is made of book tile, used for drain, covered with concrete. The pipes are covered with one thick-

Hot Water Temperatures for Different Outside Conditions.

OUTSIDE TEMP. DEG.	ORDINARY FLOW DEG.	ORDINARY RETURN DEG.	HIGH WIND FLOW DEG.	HIGH WIND RETURN DEG.
60	115	95	125	100
50	120	100	130	105
40	130	105	140	110
35	135	110	145	115
30	140	115	150	120
25	145	120	155	125
20	152	125	162	130
15	158	130	168	135
10	165	132	175	137
5	173	135	183	140
0	181	140	191	145
−5	190	143	200	148
−10	200	150	210	155
−15	210	155		

ness of high-pressure covering and a split sewer tile is placed on the top and well cemented. Expansion joints are placed at regular intervals. The expansion of water is taken care of by an expansion tank placed in University Hall. The total amount of hot-water radiation at the present time is 17,000 sq. ft.

For the steam system the size of distributing mains are as follows: One 6-in. main for north buildings extend-

ing this size to a point between Swift Engineering Hall and Lunt Library through a 6-ft. concrete tunnel and 4 in. from this point to Patton Gymnasium in a wood conduit. The total load on this north line is equivalent to 36,637 sq. ft. of direct radiation. In addition this line supplies heat for a hot-water tank for shower baths and the swimming pool, which contains 66,000 gal. of water. A 5-in. line in a brick tunnel carries steam to the south buildings, reducing at Science Hall to 3 in. for University Hall. The total load on this main is equivalent to 18,443 sq. ft. of direct radiation.

Branch lines are taken from these mains to individual buildings. The return lines are run parallel to the feed mains and are 3 in. in size at the power house. One of the interesting features is the fact that the main return line at Patton Gymnasium is approximately 5 ft. below the high part of the tunnel near Swift Engineering Hall. The expansion of both supply and return mains is taken care of by slip expansion joints securely anchored at regular intervals.

Feed mains in tunnel are covered with two thicknesses of 1 in. each of sponge felt covering. Return mains are covered with one thickness of low-pressure covering. Feed mains in the conduit are covered with one thickness of high-pressure covering, and packed together with uncovered return mains in oil shavings in a special wood boxing. The north supply main is dripped at Swift Engineering Hall, Lunt Library and Patton Gymnasium back into return line through traps. The south main is dripped at Fisk Hall and University Hall in a like manner.

All direct radiation in the buildings heated by steam is controlled by the Johnson system of temperature control, and bypass dampers in fan-ventilating systems are similarly controlled. For economical operation it was found by experience absolutely necessary that this temperature control be installed.

Ventilation.

The foregoing pertains almost entirely to the heating. Owing to the fact that no records are kept on the ventilating system, combined with the fact that limited time has prevented making proper tests, very little will be said in regard to this phase of the subject. Fisk Hall, Engineering Building and Patton Gymnasium are the only buildings equipped with a fan system of ventilation, and this is used intermittently as required. Science Hall, University Hall and Lunt Library are provided with natural flue ventilation, and in all other buildings no provision whatever is made for the ventilation.

A system of records pertaining to the heating system is kept by the University. It was decided to select five days, the average temperatures of which would be as close as possible to the following: 10 below zero, zero, 10 above and 20 and 35 above. Readings and calculations cover coal burned, amount of condensation, temperatures, etc., for these days, all arranged on a comparative basis. The results are here tabulated.

All temperatures shown, excepting those pertaining to the swimming pool, are averages of 24 readings taken hourly between 10 a. m. and 10 a. m. The pump counters, meter and coal readings are taken once every 24 hours at 10 a. m. In some instances, where no meter readings were to be had, as in the cases of steam to the swimming pool, exhaust steam for heating feed-water and the condensation in mains, it was necessary to calculate the amount of condensation to be charged to each and this was done as accurately as possible from the information at hand. The columns relating to heat, efficiencies and cost are the results of calculation based upon the actual records. In figuring the cost columns no account was taken of anything but coal burned. All curves are based on data taken directly from the figures and are submitted only to show graphically some of the more important items.

DATA SHEET, HEATING PLANT, NORTHWESTERN UNIVERSITY AT EVANSTON, ILL.

STEAM SYSTEM.

DATE from 10 A. M. to 10 A. M.	Average Outside Temp. Deg. F.	CONDENSATION—LB. From Radiators Metered	From Hot Water Tank in Gym. Metered	From Reheater Metered	For Heating Swimming Pool Calc.	In Mains Calc.	For Heating Feed Water Calc.	Total Condensation	COAL BURNED—LB. No. 2 Coal at $2.85 per ton Weighed	No. 5 Coal at $2.35 per ton Weighed	Pocahontas Screenings at $3.00 per ton Weighed	Total Coal Burned	Temp. Swimming Pool Raised Deg. F.	Evap. in Boilers per lb. Coal Calc.	Ave. Coal. per sq. ft. direct rad. per hour	Cost of Coal for Radiation and Mains	*Cost of Coal for 1000 sq. ft. direct rad. per 24 hr.
Jan. 5-6, 1912	7	273,300	10,000	37,000	7,500	6,200	20,000	354,000	56,760			56,760	15	6.23	211	$63.93	$1.16
Jan. 8-9, 1912	2	241,600	2,000	52,000	6,000	6,200	18,200	326,000	54,795			54,795	12	6.14	19	$58.43	$1.08
Jan. 2-3, 1912	9	216,200	7,000	23,000	2,400	6,200	15,200	270,000	39,025			40,550	4	6.66	17	$48.20	$0.88
Jan. 29-30, 1912	19	172,200	9,000	30,000	3,000	6,200	11,200	231,600	29,250	11,375		40,625	6	5.7	14	$42.03	$0.76
Dec. 22-24, 1911	35	115,600	7,000	15,000		6,200	8,600	152,400	9,410	19,195		28,605		5.4	.092	$28.72	$0.52

General Data.—Equivalent direct radiation in steam system, 55,000 sq. ft. Equivalent direct rad. in hot water system, 17,000 sq. ft. *Includes condensation in mains.

HOT WATER SYSTEM.

DATE from 10 A. M. to 10 A. M.	Average Outside Temp. Deg. F.	PUMP Rev. of Circulating Pumps per 24 hr.	PUMP Lb. of Water Pumped Calc.	TEMPERATURES Ave. Temp. of Fisk Deg. F.	Ave. Temp. of Reheater Deg. F.	Ave. Temp. of Return Deg. F.	Ave. Temp. Added to Water by Reheater	Ave. Temp. Added to Water by Boilers	HEAT Heat Added by Reheater B. T. U.	Heat Added by Boilers B. T. U.	Total Heat Added to Water B. T. U.	Heat Deliv. to Reheater (Calc. 1000 B.T.U. per lb. coal.)	Heat Deliv. to Boilers (Calc. 11,000 B.T.U. per lb. coal)	Efficiency of Reheater Per cent	Efficiency of Boilers Per cent	Lbs. Condensation from Reheater Metered	Coal burned in H. W. Boilers No. 5 Coal at $2.35 per ton. Lb.	Cost of Coal for Reheater	Cost of Coal for Hot Water Boilers	Total Cost for Heating Hot Water	Cost per 1000 sq. ft. Direct Rad. per 24 hr.
Jan. 5-6, 1912	−7	24,965	2,134,802	200	172	152	17	31	36,291,719	72,583,438	108,875,157	37,000,000	152,365,000	98	64.6	37,000	10,215	$8.46	$12.00	$20.46	$1.20
Jan. 8-9, 1912	2	25,406	2,162,749	200	180.4	152.2	23.2	25.6	50,171,146	55,361,234	105,532,380	52,000,000	91,520,000	96.4	60.5	52,000	8,320	$12.05	$9.78	$21.83	$1.27
Jan. 2-3, 1912	9	22,156	1,940,632	Ind. 1	149	137.5	11.5	31.4	22,202,268	60,621,844	82,824,112	24,000,000	97,350,000	96.5	62.5	23,000	8,850	$4.99	$10.40	$15.39	$0.91
Jan. 29-30, 1912	19	21,581	1,857,389	178	154	135	19	27	29,718,221	50,149,501	79,867,727	30,000,000	79,310,000	99	63.2	30,000	7,210	$7.18	$8.46	$15.64	$0.92
Dec. 22-24, 1911	35	19,923	1,643,661	144	126	117	9	18	14,846,483	29,683,458	44,530,417	15,000,000	52,630,000	99	57.1	15,000	4,730	$3.54	$5.96	$9.10	$0.53

THE HEAT UNIT.

The British thermal unit, B.t.u., is defined by Marks and Davis as 1/180 of the amount of heat required to raise 1 pound of water from 32° F. to 212° F. Peabody and R. C. Carpenter define it as the amount of heat required to raise 1 pound of water from 62° F. to 63° F. According to Rankine, William Kent and Daniel K. Clark, it is the quantity of heat required to raise the temperature of 1 pound of water 1° F. at its maximum density. The latent heat of vaporization at 212° F., according to Marks and Davis, is 970.4 B.t.u. Peabody gives it as 969.7 B.t.u.

No Offense.

She—"Pardon me, sir, for walking on your feet."

He—"Oh, don't mention it. I walk on them myself, you know."—"Boston Transcript."

Prospective tenant—"I like the house, but I don't like that huge building in front. It's such a dreary outlook."

Agent—"Oh, but that's only a gunpowder factory. It might explode any day!"

—London Opinion.

Regulation of Credits in the Building Material Trade

By W. M. Young

Address Delivered Before a Recent Meeting of the Eastern Supply Association, at Hotel Astor, New York City.

(*Concluded from page 182, August 17th issue*)

Objections Answered.

Every objection so far suggested has been based on a misunderstanding of how the new system will operate, and has been withdrawn when its method of working has been made clear. Even if all the objections thus suggested were valid, they would be offset many times over by the advantages it would confer on every dealer and on the industry as a whole.

In the consideration of such objections, it should be kept clearly in mind that the purpose of the plan proposed is:

To regulate credits, and nothing else.

To eliminate from the business incompetent, dishonest and irresponsible builders.

To put the building business of New York into the hands of men who are capable, who are honest and who have resources sufficient to carry their operations through and pay their bills.

If the dealer objects that to give the information required regarding all his customers might render him liable for damages or cause him trouble in cases where his report is unfavorable, the answer is: First, that if he tells the truth he cannot be liable for damages; and, second, that the fundamental principle on which the credit bureau will gather its information is that under no circumstances will the source of its information be divulged. Reports will be furnished by members on blanks supplied by the association, and if the member prefers, need not be signed by him, but may be designated by a number assigned to him and known only to himself and the manager of the credit bureau. The credit man will not be permitted to give to members the details of the information on which he bases his decision when credit is denied. The case is altogether different, however, when credit is approved. In order that he may exercise his own judgment in the matter, the member will be entitled to all the information obtained by the credit bureau, and that will usually be in the form of a statement, signed by the builder, disclosing all his assets and liabilities, supplemented by a summary of the credit bureau's investigation as to the truth of such statement, a report from the legal department as to the condition of his title, a report from the appraisal department as to the value of his real estate holdings when these figure in his statement, and his record for the last five years as shown by the reports of members who have done business with him. If a dealer objects to giving information regarding his good customers on the ground that this information, acquired by long experience, is a part of his assets in much the same way as the good will of his business, the answer is that he does not hold the trade of these customers because he understands their financial status better than his competitors, and the mere fact that they obtain such information will not in itself give them any better chance than they have before to take his trade away. These good customers of his will be no more attractive than any other buyers in sight, because under the new system all buyers will be safe. And besides, no matter how long his experience or how extensive his business, the information he can contribute to the common fund at the disposal of the credit bureau is but a small percentage of the total contributed by all the other members, to the benefit of all of which his membership in the association will entitle him. He obtains many times as much as he gives, and even as regards his own customers, the credit bureau will be able to obtain for him information that he does not possess and could not get himself.

If a dealer objects that a builder indebted to him, whom he is carrying along in the hope that he may finally work out, might be put out of business by the credit bureau, the answer is that the bureau will take no drastic action which would work to the detriment of its members, but will co-operate with them in working out a satisfactory solution of such cases as they arise. It will be able to obtain security for these old obligations which the member could not himself exact, and in cases where it may be expedient to protect such builders from foreclosure, it will have at its command resources altogether beyond the reach of individual members. The loaning companies and the land owners who have been fattening for years on the spoils that have been wrested from the material men under the system which has prevailed so long, will not be so quick as they have been heretofore to run their steam rollers over hapless builders if they find it means a conflict with the united power of all the building material dealers in New York. Any one of them will be only too glad to adjust himself or itself to the changed conditions when it is realized what consequences might ensue.

If the dealer who does not cater to the speculative trade objects that such an association as is proposed will be mainly for the benefit of the dealer who "takes a chance," and that he is able to take care of himself without the help of such an association, the answer is that the losses the conservative dealer does have are mainly in consequence of the injury inflicted on the building industry by shoe string builders and indiscriminate credits; that due mainly to this, his losses are really serious if considered by themselves and not in comparison with the losses sustained by his more venturesome brethren; that these losses would be practically wiped out altogether by the operation of such an association as is proposed, and that it will certainly work as much to his advantage as to the advantage of dealers who have been catering to the speculative trade to have the building business thrown into the hands of the very class which constitutes his own particular following.

If it is objected that the operation of the association will cut down building and reduce business, the answer is that most dealers would be better off to do half the business they have been doing and get paid for what they do; but the aggregate amount of business will not be reduced. Instead of the alternate building booms and slumps that have cursed the industry heretofore, there will be a steady, healthy, normal business all the time, adjusted to keep pace with the growth in population.

If it is objected, that to compel the pirates who have been preying on the industry to reform their ways or take themselves away to other fields might result in curtailing

the supply of money required for building operations, the answer is that with the business on a safe and sane basis and in the healthy condition that is sure to follow, money will be attracted from all directions that is not now available at all. The banks will be glad to handle builders' paper instead of being disposed, as at present, to shun it, and builders and dealers alike will find it easier than ever before to finance their undertakings.

If it is objected that such an association might come in conflict with the laws against combinations in restraint of trade, the answer is that the law affects only combinations which regulate prices, restrain competition and promote monopoly.

This association will do none of these things, but will leave every dealer free to conduct his business in his own way without any restriction whatever excepting only that he will not be permitted to make bad debts. Let any buyer who complains that the association refuses to sell to him produce the cash in advance and any dealer will sell him all he wants, or let him arrange through the credit bureau to secure his account and the association will give permission to its members to do business with him if they so desire.

If a dealer objects that he cannot put up to a customer whom he knows to be perfectly good, especially if an old customer of his house, that his credit must be passed on by the association, the answer is that if his customer is as good a risk as he thinks he is, the credit bureau will be able to pass on him so quickly that it may not be necessary to "put the matter up to" the customer at all. But in any case, no dealer need hesitate to make known to the very best men in the building business the rules under which the association works. The better the builder, the more surely can his endorsement and co-operation be counted on. If the risk is not so exceptionally good, exactly what that dealer needs is to have the brakes put on until the credit bureau can be satisfied that the risk is as good as he believes it to be. He might be greatly surprised at what an investigation would turn up. Under the present system, the surprise comes after the bad debt is made. This association will make its investigation at the right end of the transaction.

If it is objected that new dealers will come crowding into the market to supply the trade turned down by the association, the answer is, **let them come.** How long can they survive? If all the dealers who have been selling building material in this city by the crazy methods now in vogue can be corralled into an association which will protect them against themselves, it is hardly likely, unless the inmates of the lunatic asylums are turned loose, that a corporal's guard of gamblers can be scared up to go into the business of selling the shoe stringers and rascals who will try to get back into the building business.

The general policy of the credit bureau will be controlled by the advisory board, made up of representatives from each of the leading branches of the building material trade. It is not intended that its methods shall be so radical and drastic as to stir up opposition and competition and make trouble, but that, while it will take and maintain a firm grip on the entire credit situation, protecting the interests of its members with vigor and determination, it shall also strive to bring into harmonious co-operation with its purposes all builders who are deserving of credit, that all may work together for the regeneration and promotion of an industry which, being based on real estate—the basis of all security—may be made, as it ought to be, safer than any other business, instead of the most hazardous, as it is under the conditions which now prevail.

If it is objected that the system proposed, although ideal if it would work, is impracticable because all dealers cannot be induced to go into such an association, the answer is: Put it up to yourself. In exchange for all the benefits which the system proposed will confer upon you, are you willing to surrender the one precious privilege of gambling with your material on an operation where the credit manager tells you that you are playing against loaded dice? If your answer is, as it must be, that no man in his senses could hesitate about which alternative to accept, then why should not every one of your competitors answer in the same way?

Finally, if it is objected that the members of the association cannot be depended on to stand to the agreement on which it is based, the answer is that this feeling is doubtless due to repeated failures in all branches of the trade to hold dealers to the rules of their association and to agreement regulating prices, terms, etc. The trouble with all former associations is that they have been based on loose arrangements which have really left every member free to do just as he pleased, which he had always proceeded to do; and former agreements have been generally or always loose compacts which any man could violate with little risk of being "caught with the goods," and which every dealer was ready to justify himself to his own conscience for violating on the ground that he believed his competitors to be doing the same thing. It would be just as wise for organized society to undertake to preserve public order and to protect private property by repealing all its penal laws, and have its legislatures pass resolutions recommending to the public to follow the teachings of holy writ or to pass around pledges to abide by the golden rule. It is proposed to organize this association on a basis altogether different from anything hitherto attempted. Every dealer will be bound by an "iron-clad, double-rivetted" agreement, to be enforced by a heavy penalty, that he will not send material on an operation unless authorized to do so by the credit manager. **That is practically all there is to it.** No dealer can violate this agreement without being caught and compelled to pay the penalty. Put it up to yourself. Would you run the double risk of breaking the agreement and of putting your material on a job that you knew to be unsafe? You and your competitors alike can answer that question in only one way.

It is **not** an impracticable proposition to get sane men together for their own protection, especially on a basis where their freedom of action is restricted in such slight degree. All that is needed is for some one "to get right on the job" and bring them together. That is just what the writer of this prospectus is trying to do. He has no axe to grind and no interest to serve excepting the reformation of an industry in which he has invested all his time and means; but if anything is accomplished, someone must take the lead. If you or someone else will lead off, he will gladly follow, but such a movement will not run itself, and if you won't take the initiative, then fall in line and help him put this project through.

Reckless Sybarite.

In Concord, New Hampshire, they tell of an old chap who made his wife keep a cash account. Each week he would go over it, growling and grumbling. On one such occasion he delivered himself of the following:

"Look here, Sarah, mustard-plasters, fifty cents; three teeth extracted, two dollars! There's two dollars and a half in one week spent for your own private pleasure. Do you think I am made of money?"—"San Francisco Argonaut."

Modern Lavatories and Their Wastes

By William E. Fretwell, R. P., Honours Medallist, Member of the National Association of Plumbing Teachers

(Reproduced by courtesy of "The Sanitary Record," London, England.)

The construction of modern lavatories—thanks to the advance in sanitary science—has undergone many changes during the last few years; the old form of lavatory, with its small outlet, secret overflow, and wooden casing having given way to an improved shape of basin with full-way outlet and accessible overflow; the same being usually fixed without any casing whatever, either by means of cantilever brackets or by being built into the wall, the latter pattern being known as "Corbel" lavatories.

The basins are now mostly of an oval or D shape, these shapes giving greater freedom to the user; in addition, such shapes, with the outlet placed near the back, conduce to the basin being left in a cleaner condition.

The overflows may be of the standing waste pattern, exposed to view by being fitted in a recess formed in the back of the basin, or an accessible overflow may be constructed to enter the waste immediately under the basin, usually through a slot in the plug and washer. An excellent form of waste now on the market has a slide fitted to the face of the recess to which the waste is connected. When the slide is pushed down the water is prevented from entering the recess; the overflow is formed by the slide being made of a less depth than the basin, the water passing over the top of the slide into the recess, thence through the waste.

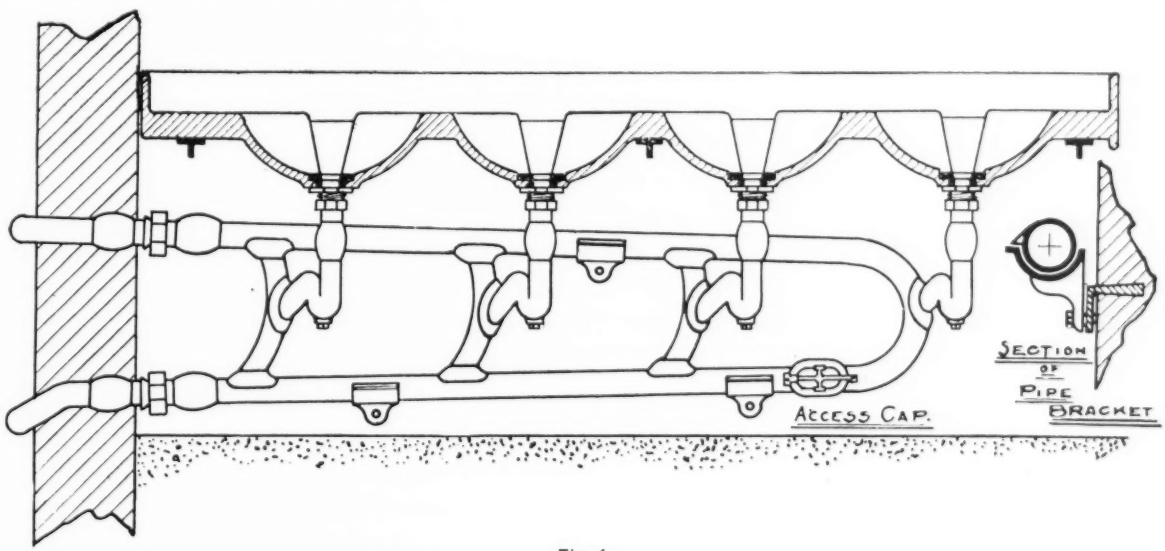


Fig. 1.

Lavatory Wastes.

The outlet of the modern lavatory being near the back of the basin, less room is obtainable for the waste connections. Fig. 1 shows a method of fitting a waste of such a description.

The main waste is 2 in. diameter and is continued and branched into the vertical stack to act as a vent. The traps and branch pipes are 1½ in. diameter. It will be noticed that the branch pipes act as the trap antisyphonage, and is nearer the head of the trap than is generally possible, a further advantage being that the probability of fouling is minimized. The end trap should always enter the return bend to prevent any dead ends being formed. An access cap concentric with the bore of the pipe and long enough for rods to be passed through should be fixed as shown.

It is a good plan to fit unions to the ends of the waste for convenience in fixing and to enable the waste to be taken out and cleaned at any time.

The writer objects to horizontal wastes being fixed tight back to the wall, as much dirt lodges in the space between the wall and the top of the pipe. The pipe brackets shown are of galvanized iron, the waste being kept away from the wall ¾ in. The set screw enables the caulking piece to be fixed horizontally in the brickwork, the bracket being afterwards set to the desired gradient. To prevent the tendency of the waste to pitch forward, a strip of lead is wiped on the waste to rest on the front edge of the bracket.

Whatever fixings are used, they should be placed close enough together to prevent any sagging occurring when hot water is passing through the waste and the tensile strength of the metal lowered.

Setting Out Lavatory Wastes.

The waste may be set out geometrically on the floor or bench; it is seldom, however, that this is done, owing to the large number of lines required and the difficulty of building up the waste from the same.

A common practice is to bend and temporarily fix the main waste in its position; the unions of the traps are then wiped on and the same screwed up to the basins, the other pieces of pipe being then prepared and fitted;

the main waste is then marked, taken out, and the branches opened, soiled, and shaved, after which it is again placed in position, and the whole tacked together prior to wiping.

This necessitates a number of journeys to and from the bench, and although the waste would undoubtedly be well fitted, is not by any means the easiest or quickest method.

Where possible, the quickest and easiest method is to set out on the floor of the shop the back elevation, showing the floor line and external wall; the basins should

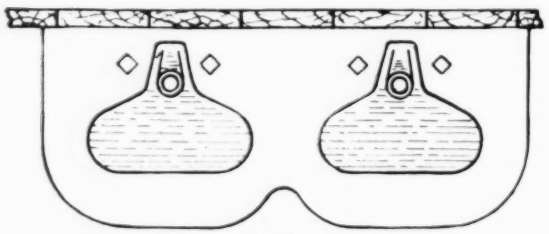


Fig. 2.

then be placed to stand on the backs, as shown in Fig. 2, care being taken that they are placed the correct distance from the floor line, as shown in Fig. 3. The main waste should then be bent and laid in position, the unions being then wiped on the traps and afterwards screwed up to the basins; the branch pipes may then be bent and fitted, the holes marked, pipe opened, soiled and shaved; it should then be again placed in position and tacked prior to wiping.

Where it is not possible or convenient to lay the basins out in this manner, another method is to fix the basins in their position, and lay a board under the holes of the basins—a piece of board should also be nailed to the ends of the same, so that the correct distance from the wall may afterwards be known; the holes in the basins should then be marked on the board, which should afterwards be bored and the plugs and washers passed through the same. The board may then be conveyed to the shop and placed in position instead of the basins, as shown in Fig. 4, the whole routine of the last method being then repeated.

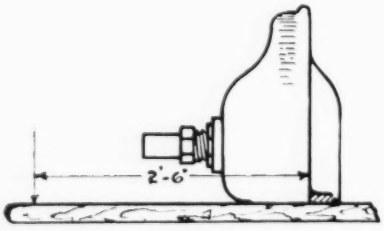


Fig. 3.

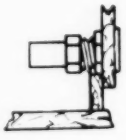


Fig. 4.

The style of waste shown in Fig. 1 is now being fitted to some important buildings in London—a range of some thirty basins recently fixed by the previous writer of these articles was supplemented by a branch with screw cap being connected to the anti-syphon pipe of each basin, and also by access caps being placed at frequent intervals in the main pipes.

The screw caps to the bottom of the traps should always be wiped in, or they will be frequently found to work loose after being in use for some time.

Lavatory basins are often fixed about 12 inches apart for the purpose of isolation, and to prevent the splashings from entering one another.

THE ENGLISH AMALGALINE LEAD JOINT.

A new method of joining lead pipes together without the use of plumbers' solder or by lead burning has recently been introduced to the plumbing trade in England. The advantages claimed for the process are the simplicity of the operation, the saving of time and cost of material, the reduced bulk of the joint when compared with an ordinary wiped joint, and the greater strength and neatness of the joint, says "The Plumber and Decorator."

Fig. 1.

The method of making a joint on a straight lead service-pipe is to first cone the spicket end of the pipe by the use of the tool shown by Fig. 1, and then the socket end by the tool Fig. 2, which leaves the ends of the pipes bright and free from oxide. The pointing material is called "Amalgaline," which is reported to be pure tin, and is rolled out to a ribbon form 0.05 millimetre thick. The ribbon is kept on a wooden roll and is coated on both sides with a special flux.

A piece of the ribbon having been wound on the spicket end of the pipe, the latter is inserted in the socket of the other piece of pipe, and heat applied externally by

Fig. 2.

means of a blow-pipe or blow-lamp. In a few minutes the Amalgaline melts and the joint is made. A section of the finished joint is shown by Fig. 3. The material used is so very thin that the two ends of the lead pipe may almost be said to be metal-to-metal, the Amalgaline forming an alloy with the lead on both surfaces. The manufacturers have a certificate from the Engineer of the Metropolitan Water Board, of London, to the effect that

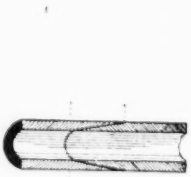


Fig. 3.

Fig. 4.

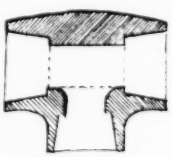


Fig. 5.

with a joint made on a piece of ½-in. lead pipe, the pipe burst when under a pressure of 1,200 lbs. per square inch, but the joint remained unaffected.

Figs. 4 and 5 are respectively a cast lead socket and a cast lead tee for joining lead pipes by the use of Amalgaline.

On Second Washing.

"I've just washed out a suit for my little boy—and now it seems too tight for him."

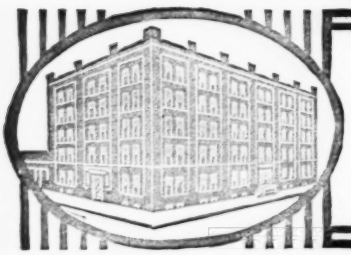
"He'll fit it all right, if you'll wash the boy."—Meggendorfer Blaetter.

"Domestic Engineering" Cartoon on "The Master Plumber, a Good Citizen".—LXVII.

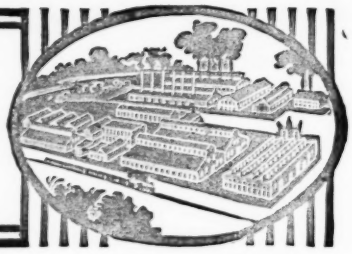
I GUESS I'LL HAVE TO WRITE SOME NEW LAWS!
WE NEED SOME LEGISLATION, SAMUEL, TO TAKE CARE OF THESE THINGS PROPERLY!
LEGISLATION
MASTER PLUMBER
UNSANITARY CONDITIONS OF PUBLIC BUILDINGS SCHOOLS PARKS AMUSEMENT RESORTS FACTORIES SEWAGE SYSTEMS ETC.- ARE A MENACE TO THE HEALTH OF THE NATION
DOMESTIC ENGINEERING
1912

The Modern, Up-to-Date Master Plumber is One of Uncle Sam's Most Useful Citizens

If you want to possess a special proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.



News of Interest Among the Wholesalers and Manufacturers



THE MACKAY MFG. CO. IN NEW QUARTERS.

The Mackay Manufacturing Co., of New York City, has moved its general offices from 113 Beekman Street to 234 Water Street.

WILL MANUFACTURE HEATING SPECIALTIES.

The Phillips Heater Mfg. Co., of Boston, Mass., has been incorporated with a capital of $25,000, to manufacture heating specialties. The incorporators are William W. Phillips, A. R. Phillips and Samuel N. Cohn.

WILL OPEN NEW PLUMBING SUPPLY BUSINESS IN LOS ANGELES.

The Plumbers' Supply House, of Los Angeles, Cal., has been incorporated with a capital of $50,000, to conduct a plumbing supply business. The incorporators are James Hancock, H. L. Miner, J. B. Mutch and J. E. Monroe.

IMPERIAL BRASS MFG. CO. IN ITS NEW BUILDING.

The Imperial Brass Manufacturing Co. has moved into its new six-story modern factory building at 524 South Center Avenue and 1120 West Harrison Street, Chicago. The building occupies 100 x 125 feet, and it is up-to-date in every detail and a model of a twentieth-century factory for the production of brass goods. It has been equipped with new machinery and the company has added several new lines to its products.

AT WORK ON A UNIFORM COST SYSTEM FOR PLUMBING GOODS.

A uniform cost system for various articles used by plumbers and the allied trades is now being worked out by the officials of the National Pipe and Supplies Association, with general offices in the Henry W. Oliver Building, Pittsburgh, Pa. C. V. Kellogg, of the Kellogg-Mackey Co., of Chicago, is a member of the Advisory Board of this association, the board being composed of past presidents of the organization.

PROPERTY OF THE PRESSED RADIATOR CO. TO BE SOLD AT PUBLIC AUCTION.

Watson & Freeman, of Pittsburgh, Pa., who are representing the Fidelity Title & Trust Co., of that city, the latter being the trustee for the Pressed Radiator Co., with property at West Pittsburgh, in Lawrence county, Pa., have just advertised the sale of the property to take place at public auction at the Allegheny County Court House, Pittsburgh, September 10. Included in the stock offered for sale are 6,097 completed radiators; 124,373 complete sections of radiators; 26,275 sections, amounting to 65,940 square feet; 20,871 radiator brackets; 31,519 radiator legs; 55,600 radiator plugs. The company has offices in the Bailey-Farrell Building, Pittsburgh; Peoples Gas Building, 122 So. Michigan Ave., Chicago, Ill., and the Brunswick Building, 225 Fifth Avenue, New York.

PERSONAL MENTION.

L. O. Koven, of L. O. Koven & Bro., 50 Cliff Street, New York City, is at the present time on a vacation tour in Canada.

* * *

J. R. Wettstein, president of the United Lead Co., New York City, is away on a month's vacation trip.

* * *

George H. Billo, 82 John Street, New York City, has just returned from a month's vacation tour on the Pacific Coast, greatly improved in health.

* * *

Frank T. Bassett, jr., has resigned his position as eastern sales manager of the International Heater Co., of Utica, N. Y., to become secretary of the Utica Heater Co., Utica, N. Y. The change took place early this month.

ACCEPT NEW POSITIONS.

Wesley U. Hawkins will on September 1 succeed Charles W. Frean as manager of the plumbing supply department of the John Simmons Co., at 48 East Forty-first Street, New York City. Mr. Frean will accept the secretaryship of the newly organized New York Plumbing Exchange, with offices at 103 Park Avenue.

WILL START ON SEMI-ANNUAL WESTERN TRIP.

The many friends throughout the West of that veteran, J. C. Pierson, of the Brock Wrench Manufacturing Co., 38 Vesey Street, New York City, will be glad to learn that he expects soon to be with them. Mr. Pierson will leave New York on Saturday, August 24th, and will journey as far west as Denver. In addition to the complete "Brock" wrench line, this gentleman represents Otto Bernz, of Newark, N. J., and the Barnes Tool Co., of New Haven, Conn.

GREAT DEMAND FOR SANITARY POTTERY GOODS.

The demand for sanitary pottery so far this year is admitted by sanitary pottery manufacturers to be the most extensive in the history of the trade, or at least since the boom year of 1907. However, there are more sanitary potteries now in operation than during 1907, so for that reason the production is by far the heaviest ever known.

The activity in the building lines throughout the United

States, coupled with the fact that hundreds of office buildings are going up throughout the country, has made the demand for sanitary pottery unusually heavy. The Eastern sanitary potteries are crowded with business, while those in Wheeling and other West Virginia towns, as well as those in Ohio and Indiana, also report a heavy demand for sanitary plumbing goods.

When the fiscal year report of the United States Government is completed, statistics will show the production of sanitary ware to have exceeded the production of the previous fiscal year by hundreds of thousands of dollars.

And, the end of this increase in the production of sanitary pottery is not in sight. It will continue to grow for years to come.

THE LIMITED MARKET FOR PLUMBING SUPPLIES IN CHINA.

Consul General Samuel S. Knabenshue, writing the Bureau of Manufactures from Tientsin, China, tells of the possibility existing for increasing the volume of American made plumbing goods in the following note:

"Inquiry is made as to the possibilities of selling plumbing supplies in Tientsin, as well as in other Chinese cities. The market for such supplies is so far limited to Tientsin and Peking; and in these chiefly to the residences of foreigners, to the leading hotels, business houses, public offices, etc. The vast mass of Chinese structures have no plumbing at all. Peking and Tientsin are the only cities of North China which have waterworks. In the native city of Tientsin there are public hydrants at even distances along the streets, and the people carry their supplies from these in pails. The same is true of Peking. Few Chinese residences have plumbing arrangements as yet.

"The above is not said in a spirit of discouragement, but rather to show how enormous the field will be for plumbing supplies when the business is properly pushed. What is needed is some American house to send out a man to act as a missionary in this business. There are houses here in Tientsin which import plumbing materials, but they keep hardly any stock on hand. I think that possibly there are on sale at present, in the foreign settlements of Tientsin, not over a half dozen heaters for water for stationary bathtubs, etc. Anything more elaborate is ordered from Europe or from the United States."

THE USE OF MODERN PLUMBING GOODS IN ITALY.

United States Consul Frank Deedmeyer, in a report to the Bureau of Manufactures at Washington, D. C., with reference to the increased use of sanitary supplies in Leghorn, Italy, says:

"The use of such toilet appliances as bathtubs, washstands, and water-closets in this city of 100,000 people has been very limited, owing to an inadequate water supply. However, Leghorn is now building a new waterworks system, to be completed this fall, which will bring an ample supply of water into the city for domestic and for manufacturing purposes.

"Local plumbers and dealers in bathroom supplies consequently expect a large demand for these goods.

"The bathtubs generally kept in stock now by local dealers sell at 130 to 150 lire (1 lira = $0.193) and they are bought by these dealers at from 105 to 120 lire, at 6 months' credit. The styles preferred are those made of pig iron, enameled with porcelain, 175 by 75 centimeters long on the outside. Bath tubs used in Italy now generally come from Great Britain and Germany; some are manufactured in Milan, Italy.

"Water-closets are installed, not including the ordinary plumbing, at from 30 to 55 lire, according to style and quality. The best have walnut seats. They wholesale at 25 per cent less than the prices charged for installing. The ordinary height is 42 centimeters. Most of these come from Great Britain or Germany, and some are made at Milan.

"Washstands of the same material as bathtubs are installed for 10 to 80 lire. The cheapest are bought wholesale at 4.50 lire. The credit terms are the same as in the sale of bathtubs. These also come generally from England, Germany, and Milan.

"It is suggested that the American manufacturers of these supplies intending to enter the Italian market, should, if possible, secure a representative in one of the largest cities of this country, who understands this trade and who has a knowledge of the Italian language. The dealers in small cities and in towns rarely import directly, but secure their supplies in such lines from the representatives of foreign manufacturers found in the largest cities."

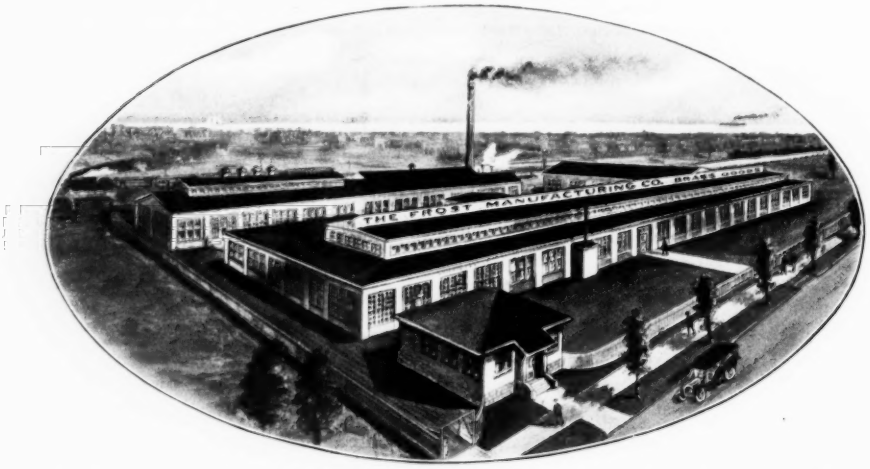
THE MURDOCK MFG. & SUPPLY CO. NOW IN ITS NEW HOME.

The modern fireproof building of the Murdock Mfg. & Supply Co., located at 426-30 Plum Street, Cincinnati, O., is now completed and the company has moved into its new quarters. When the building was erected, provisions were made for the addition of eight more floors, and the company reports that, judging from the present volume of business being handled in this building, it may be necessary to add the other eight floors in the very near future.

The New Business Home of the Murdock Mfg. & Supply Co., in Cincinnati, O.

THE FROST MFG. CO. OCCUPYING NEW PLANT.

The Frost Mfg. Co., Kenosha, Wis., finding its former manufacturing facilities inadequate to take care of its rapidly growing business, has just completed and moved into its new commodious factory, which is shown herewith. The new plant is thoroughly modern in every respect. It is laid out entirely on one floor, is of brick and steel truss construction, which provides for plenty of light and air. The office building is also modern and is separated entirely from the manufacturing buildings. This new plant will increase the capacity of the company fully 50 per cent and will afford better opportunity than ever of giving its trade first-class service.



The New General Office and Factory Buildings of the Frost Mfg. Co., at Kenosha, Wis.

THE MUELLER PRIZE FLOAT IN THE HOME COMING PARADE.

The principal event of interest in Home Coming Week, which attracted thousands of visitors to Decatur, Ill., during the week of August 5-10, was the street parade on Wednesday, August 14th. Decatur manufacturers and merchants vied with one another in presenting handsome floats showing their product, and the parade was one of great beauty, including as it did, many floats upon which decorative and artistic embellishment were carried out in a most attractive manner.

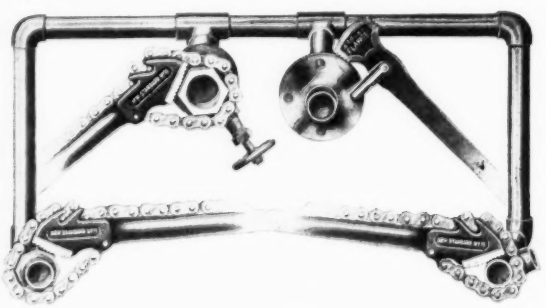
In a contest for popular favor it was therefore no small honor to the H. Mueller Mfg. Co., to be awarded the prize, although the trade familiar with this company's method of never doing anything by halves, will evince no surprise at the result.

The Mueller Company's float, an illustration of which appears herewith, called attention to Rapidac, rapid acting compression work. The decorative material was pink, white and blue, the official colors of the week. Samples of the goods ornamented the float, drawn by one of the company's superb black teams of draft horses. At each corner sat a young lady, dressed in the carnival colors, and distributing Rapidac buttons. They were Miss Mary Ayers, Miss Ruby Blair, Miss Ruth Abbott and Miss Bessie Smith. Miss Grace Kelso drove the team. Concealed within the float was a band of Rapidac rooters giving with explosive force, the Rapidac yell: "Rapidac, R-a-p, R-a-p-i-d, R-a-p-i-d-a-c, Ra-pid-ac, Rapidac!"

The H. Mueller Mfg. Co.'s Prize Float in the Home Coming Parade, at Decatur, Ill.

THE NEW BROCK STANDARD CHAIN WRENCH.

The Brock Wrench Mfg. Co., 38 Vesey Street, New York City, has been making wrenches for fifteen years, its former president, the late Mr. Brock, being the patentee of the original old-style Brock wrench. This company has now brought out an improved chain-wrench containing several new ideas, one of these being the half-link adjustment, which enables the user to apply the wrench on any style of pipe-fitting, valve or nut. The wrench has an inserted removable jaw, not held by bolts that break, but dove-tailed in the head of the wrench,

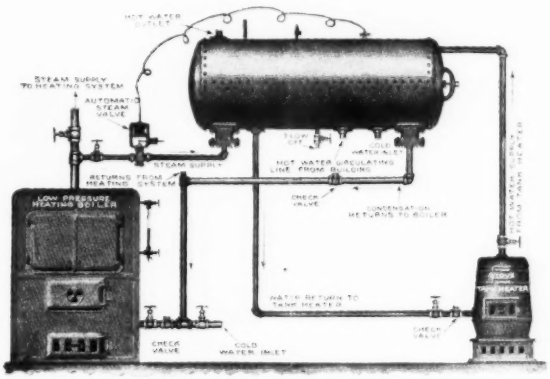


The New Brock Standard Chain Wrench Shown at Work on Different Kinds of Fittings.

which no amount of pull or strain will loosen. This is one of the wrenches that can be used in doing a complete job of pipe-fitting without the aid of any other wrench. On account of the large number of these wrenches being produced at one time, the company is enabled to supply them at an extremely moderate price. Jobbers who are not yet acquainted with this wrench can obtain a sample wrench from the manufacturer on request, and plumbers and heating contractors can obtain full particulars upon the same terms.

ADVANTAGES OF THE PATTERSON HOT WATER TANK.

The accompanying illustration shows how the Patterson hot water tank may be supplied with steam from a low-pressure boiler during the heating season, the condensation returning by gravity; also cross-connected to a tank heater, for which it furnishes storage capacity when the heating boiler is not in use. This hot water tank, manufactured by Frank L. Patterson & Co., 26 Cortlandt Street, New York City, is said to be an improvement on the old style tank with a coil or return bend for heating water for domestic or manufacturing purposes. Unlike the ordinary tank and coil, there is no idle heating surface in the Patterson tank. The heating surface consists of a number of parallel seamless drawn brass tubes, both ends of which being expanded into heavy cast-iron tube heads with an improved roller expander. Their shape provides for the free contraction and expansion of each individual tube so there is no danger of leakage. This tank is especially adapted for use in high buildings, and is meeting with great favor among heating contractors and engineers. Descriptive circular containing dimensions and price list of the Patterson hot water tank will be mailed upon request to the manufacturers.



The Patterson Hot Water Tank, Connected to Heating Boiler and Tank Heater.

LEADS WORLD IN ASBESTOS MANUFACTURE.

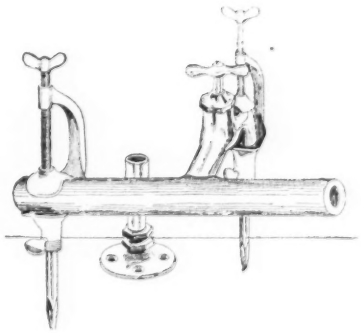
In 1911 the United States excelled all other countries of the world in the conversion of raw asbestos into manufactured products, but a very small percentage—less than 1 per cent of the asbestos used—was mined in this country, by far the larger part being imported from Canada. The total production in the United States for 1911, according to the United States Geological Survey, was valued at $119,935; the raw material imported from Canada was valued at more than eleven times that amount. Canada's production of asbestos in 1911 was worth nearly $3,000,000.

GRIFFIN'S PATENT WIPING CLAMPS.

J. H. Griffin, 506 W. 26th Street, New York City, is the inventor of a simple and very practical clamp for plumbers' use instead of the ordinary pipe vise. These clamps are cast with a tapered recess in the bottom to receive head of pin; on the outside there is a thread to fit a one-half inch gas pipe, which permits clamp to be supported

Griffin's Patent Wiping Clamp.

by a coupling-pin and flange screwed to floor; or, for bench work, a hole can be bored through top of bench and clamp locked on same by a running thread nipple with two lock nuts. The steel pin furnished with each clamp will be found most useful for jobbing, as the pin can be driven in floors, brick wall, or anything convenient to the joint. There is a set screw on the side of the recess, as shown in the illustration, so that pin can be made very secure in cases where clamps are to be hung from a ceiling. These clamps can be used in any position and it is claimed they will hold a pipe as firmly as a pipe vise. They are very handy for use in wiping faucets on to pipes, wiping a ferrule on to a lead pipe, in connecting a line of pipe running up alongside a brick wall or



Griffin's Patent Wiping Clamps on the Job.

partition, and in wiping joints in tight places. Some plumbers use them for holding gas pipes when cutting and threading, by driving pin in post and holding pipe from turning with a wrench. The other illustration shows the Griffin Wiping Clamps on the job. Plumbers who use this handy device claim that it saves them a boy's

time and a great deal of trouble and inconvenience. It is sold by jobbers everywhere. Descriptive literature will be mailed upon request to Mr. Griffin.

AN ATTRACTIVE CATALOGUE OF WATER SUPPLY SYSTEMS.

Samuel Sloan & Co., Rochester, N. Y., have issued a catalogue compiled on the loose-leaf principle, illustrating and describing in detail their "Superior" pneumatic water supply systems for country homes, suburban residences, public or private buildings and industrial plants. Also pumps, pump jacks, gasoline engines, electric motors, air compressors, etc. The principle of the pneumatic water supply system is very simple, the water being pumped from either a well or cistern into the bottom of a pneumatic tank which compresses the air in the upper part of the tank. The pressure of the compressed air forces the water through the supply pipes taken off from bottom of tank to all points throughout the building where plumbing fixtures are located. There is nothing complicated about this system. Any plumber can easily install any of the outfits. Parties desiring a copy of this catalogue, or further information, can receive same by sending a card to the above company.

THE KELLY & JONES CO. ISSUES NEW CATALOGUE.

The Kelly & Jones Co., with general offices in Pittsburgh and factory at Greensburg, Pa., manufacturers of iron and brass castings and specialties for steam, gas, water and oil, has just issued catalogue "L." The book contains 460 pages, is handsomely bound in cloth and very completely illustrated. This company has adopted the custom of designating its various types of valves and fittings by using figure numbers, and the custom has been adhered to in this issue. The catalogue calls special attention to a line of malleable iron unions covered inside and outside with copper to prevent corrosion, and guaranteed for a working pressure of 250 pounds. Also malleable iron unions, brass to iron seat, illustrated in two colors, showing the brass and iron parts. Other products of this company are fully illustrated and described in a comprehensive manner, in this catalogue. An alphabetical index for ready reference is found in the back of the book, also tables and other useful data—in fact, it is an encyclopedia of general information on the lines represented. Any of our readers desiring a copy of this interesting catalogue can procure it upon request to the Kelly & Jones Co.

YEOMANS BROTHERS' NEW CATALOGUE.

Catalogue "S" has recently been issued by Yeomans Brothers, 231 Institute place, Chicago, manufacturers of pumping machinery. This catalogue is very well written, is printed in two colors, and clearly illustrates and describes pumping machinery adaptable to a great variety of purposes. In its pages is contained much general information regarding sewage ejectors, deep well pumps, triplex pumps, combination electric filling pumps and air compressors for automatic sprinkler systems, electric pumps for house supply systems, etc. The Yeomans sewage ejector is specially designed for use in buildings with basements below the level of street sewers. In describing this product the manufacturers state: "We offer Yeoman's ejectors for the investigation and use of all who demand minimum operating cost, minimum floor space requirements, reasonable first cost, and maximum reliability. They are entirely automatic, noiseless and gas tight, and handle hot water as well as cold, and can be arranged to operate with alternating or direct electric current, steam or water power. Fully guaranteed and sold on test and approval." Interested parties will be mailed a copy of this catalogue upon request to the manufacturers.

THE METAL MARKET

FURTHER ADVANCES IN ALL LINES.

Liberal buying of finished steel by all classes of consumers has resulted in further advances in the price of finished steel, which brings with it higher prices for pig iron. The advance in iron has been especially sharp, being 50 cents a ton for foundry, while basic has advanced 75 cents a ton, and malleable bessemer $1 a ton in the Chicago market. Consumers have purchased pig iron freely, and numerous orders, ranging from 2,000 to 5,000 tons, have been booked by blast furnace interests. As an indication of the activity of business it may be mentioned that not within the last five years have makers of heating supplies been so rushed with orders as for the past month. A Dover, N. J., foundry which piled up stock in unprecedented quantities in May and June is one of the few that is able to make shipments promptly. The heating supply men, as a general rule, have accumulated more stock than manufacturers in other lines of business, and as a consequence, are in a comparatively strong position. One of the largest independent manufacturers of constructural steel has advanced its price to an equivalent of $1.45, Pittsburg, for plain material, and even at this premium will not accept orders for shipment less than 90 days. Orders for rails by the railways are striking indications of the enormous business that has been booked. The railway managers would not buy as liberally as they have so early in the season, if they did not think there would be a considerable difficulty in procuring shipments next year.

Quotations for pig iron are as follows:

No. 1 Northern Foundry, New York	$16.00 to $16.25
No. 2 X Northern Foundry, New York	15.75 to 16.00
No. 2 Southern Foundry, Birmingham	12.00 to 12.25
No. 2 Southern Foundry, Cincinnati	15.00 to 15.50
No. 2 Northern Foundry, Chicago	15.00 to 15.50

COPPER STEADY AND FIRM.

The last report of the Copper Producers' Association indicates that all companies are making an effort to turn out a maximum tonnage. From now on it is probable that less will be heard of surplus stock and more attention will be paid to the activity of the copper industry. No large sales have been made recently but a number of small orders have been taken at 17.75 cents for lake and 17.62½ cents for electrolytic. The brass mills in New England are using more copper than ever before.

TIN.

The market is steady, and stocks, although small, seem to be sufficient to meet the demands. The price for five-ton lots in New York is 46 cents.

LEAD.

The demand is fair but prices are low, due to the uncertainties of the tariff. For lead in 50-ton lots 4.50 cents is quoted.

THE OLD METAL MARKET.

Dealers' buying prices in New York are as follows:

Light copper	$13.00 to	$13.25
Strictly crucible copper	15.00	15.12½
Uncrucibled copper	14.25	14.50
Uncrucibled copper wire	14.25	14.50
No. 1 machine composition	11.25	11.50
No. 1 brass turnings	8.50	9.00
New brass clippings	10.25	10.50
No. 1 composition turnings	11.00	11.50
Cocks and faucets	9.50	9.75
Light brass	7.00	7.25
Heavy brass	8.75	9.00
Heavy lead	3.85	4.00
Tea lead	3.50	3.75
Scrap zinc	5.00	5.12½
No. 1 pewter	30.00	31.00
No. 2 pewter	8.00	10.00
Close cut solder joints	8.25	8.50
Block tin pipe	40.00	41.00
Pure tin foil	28.00	30.50
New aluminum scrap	16.00	17.00
Old aluminum scrap	14.00	15.00

MILWAUKEE MASTER PLUMBERS' ANNUAL OUTING.

The Master Plumbers' Association of Milwaukee, Wis., held its annual outing and picnic on Saturday, August 17th, at Waukesha Beach, twenty-five miles west of Milwaukee. Nearly every master plumber in the city was in attendance, and they were all accompanied by their families. The picnic was an all-day affair, and the large picnic party reached the Beach at 10:30 o'clock in the morning, three special cars having been chartered for the occasion. The day was spent in sailing, fishing, bathing, etc., and everyone in attendance enjoyed the outing according to his own taste. Many brought their lunches with them while others dined at the Waukesha Beach Hotel. The principal event of the day was a baseball game between the North Side and the South Side Master Plumbers, which was won by the South Side team by the score of 8 to 7. George R. Stolz, plumbing inspector of Milwaukee, acted as umpire, and he performed his duties in that capacity to the entire satisfaction of both teams. Wm. E. Goodman, the venerable ex-treasurer of the National Association of Master Plumbers, attended the outing as the association's guest of honor.

At the Milwaukee Master Plumbers' Picnic. From Left to Right They Are: In Top Row—Joseph Wittig, jr.; Miss Viola Pelunck and F. C. Kuetemeyer. In Front Row—W. E. Goodman and W. H. Halsey.

At the Milwaukee Master Plumbers' Picnic. Reading from Left to Right They Are: In Top Row—W. W. Dusold and Edw. Grassler. In Front Row—Jacob Schuh and George Leubke.

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect Oscar Wenderoth, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., on Sept. 4, 1912, for the extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring, interior lighting fixtures, and approaches), of the United States post office and courthouse at Pensacola, Fla. The work contemplated is the construction of a 3-story basement and attic extension of approximately 3,400 square feet ground area; fireproof construction, stone facing and slate roof; and certain remodeling and repairing of the present building.

Until 3 p. m., on Sept. 18, 1912, for the construction complete (including plumbing, gas piping, heating apparatus, electric conduit and wiring, and lighting fixtures) of the United States post office at Livingston, Mont. The building is two stories and basement, with a ground area of approximately 4,850 square feet. Fireproof construction; stone and stucco facing; tin roof.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from the custodians of the above sites, or from the Supervising Architect at Washington, D. C.

News of the Plumbing and Heating Contractors

Reports of the Week from Many Different Cities Show Both Business and Personal Activity in the Trade

NEWS FROM NEW ENGLAND.

Massachusetts.

Quincy.—Edward P. Burrows was the lowest bidder for the heating and ventilating of the new Ward 8 schoolhouse. His figure was $4,746.

Boston.—The State House Commission has awarded contracts for work in connection with the improvement of the heating, ventilating and power plant at the capitol as follows: Piping, Lumsden & Van Stone Co., $2,490; electrical work, Lord Electric Co., $2,078; generators, Sprague Electric Co., 3,775; air washers, Thomas & Smith, Inc., $9,321.

Springfield.—Plans for the new public comfort station which is to be erected in Court Square, in the center of the business section of the city, are being prepared. It is expected that the station will cost about $20,000.

Leominster.—No definite action has yet been taken regarding the new plumbing regulations to be adopted by this town. Several conferences have been held with master plumbers and journeymen and a draft received from the state board is being carefully considered.

Springfield.—The officers of the Lawler Brothers Theater Co. have awarded the contract for plumbing, heating and ventilating the new theater building soon to be erected on Federal Street to George Corsiglia. The price has not been made public.

Holliston.—Adams & Co. have the contract to install a heating plant in the residence of Lambert Gallottee on Grove street.

Upton.—Dwight R. Bowker has been awarded a contract to install sanitary plumbing in the Sharpe block at West Upton.

Uxbridge.—A contract for heating and ventilating in a new four room addition to center school has been placed with Stone & Underhill, of Boston, the contract price being $5,624. The only other bidder was Huey Bros., of Boston, $5,927. Stone & Underhill also have the contract for heating, ventilating and plumbing the high school addition for $4,566.

Rhode Island.

Providence.—The state board of control has awarded contracts for the new service building at the state sanatorium at Wallum Lake. J. H. Smith, of Pascoag, will do the heating and E. J. Sullivan, of Providence, the plumbing.

Woonsocket.—Henry Pouliot, Sr., has been elected plumbing inspector of the city to succeed Frank P. O'Donnell, who recently resigned to go into private business after continuous service since the position was made. There were several candidates for the place, including William D. Grady, who has been acting inspector, but the number was narrowed down to two at caucuses of the Republican and Democratic members of the city council and when a vote was taken by the council later it stood: Henry Pouliot, Sr., 13, George B. Gremord, 6. Others who had sought the position were Acting Inspector Grady, Willis E. Hope and Joseph Duval.

Providence.—Plans for a public comfort station to be erected at Weybosset and Mathewson Streets have been accepted by the city council committee. It is expected that the station will be completed by another spring. It will be built underground with separate rooms for men and women.

Central Falls.—During the first seven months of the current year more plumbing work has been done in this city than in the first nine months of last year. This is shown by the record of permits issued by the inspector of plumbing. The city is compelling property owners to connect with the sewer and this is making a lot of extra work for the plumbers.

Connecticut.

New Haven.—J. P. Bowe, of this city, has been awarded the contract for the ventilating in connection with an addition being made to the Washington avenue schoolhouse in Wallingford.

Deep River.—A. E. Cochrane has been given a contract to install a water system on the so-called Minor Waitt estate, which has recently been sold to a Mr. Bliss, of New York. The system will include a reservoir, 1,500 feet of two inch pipe to convey the water to the buildings, and the installation of modern plumbing in all of the buildings. The work will require several weeks to complete.

Hartford.—Having outgrown its present quarters, which it has occupied continuously for the past 17 years, the firm of W. and J. Murray, of 450 Main street, is to move to new quarters in an adjoining building. The business is now conducted by Joseph E. Murray under the old firm name. The firm was established in 1896 and has made a specialty of plumbing and gas fitting in all its branches.

Bridgeport.—The contract for the plumbing and hot water heating in a residence being erected on Mill avenue for Henry L. Bishop, has been awarded to C. S. Eames & Co.

Rockville.—John Mulligan has been awarded the contract for plumbing and heating a new fire engine house, he being the lowest of several bidders.

Bridgeport.—The W. P. Kirk Co. has the contract for plumbing and heating in a building on State street for C. Barnum Seeley.

NEWS FROM PHILADELPHIA.

M. G. Park, 1211 Cherry Street, has secured the contract for plumbing in seven houses to be erected at Wyoming Avenue and C. Street for P. McCurdy.

Wm. N. Tophan, 6033 Germantown Avenue, will install plumbing in buildings at 500-22 S. Ninth Street for the Star Savings Bank.

L. J. Sommer & Son, 2436 Brown Street, will install drainage systems in 17 houses, 2111 to 43 Pitan Street for G. Hildebrand.

E. Reinert, 5 E. Oxford Street, will do the plumbing in the residence of C. Lambenheimer, 437 E. Thompson Street.

Herman Goldner, 425 W. Lehigh Avenue, will install drainage systems in nine houses, 2731 to 43 and 2747-49 Heller Street, for J. Hutton, owner. He also has the contract for plumbing at 4710 D. street.

W. G. Finley, 2620 Douglas Street, will introduce plumbing at 2840 Ridge Avenue for W. H. Liebich.

Contract for the plumbing in six houses at Gilham and H. Streets, for J. Brough, has been awarded to B. Landon, 1216 N. 4th Street.

W. J. Robinson, jr., 6102 Ridge Avenue, has the contract for plumbing in 13 houses at Harmon Road and Ridge Avenue for O. S. Keeley.

G. S. O'Connor, 4464 Richmond Street, has the contract for plumbing in property on Leffere and Almon Streets for Jos. Zebrouski. He also has the contract for plumbing at Thompson and Leffere Streets for J. Placar.

Storch & Scheid, 1102 Wolf Street, will install plumbing in 30 houses, 3407 to 65 Arbor Street, for Jos. Arthur, owner.

Herman Bamford, 3507 Longshore Street Tacony, will install drainage systems at 3602 and 17 Knoss Street, 6811 to 21 and 6810 to 16 Edmund St. Tacony, for Mary Disston Estate.

W. J. McCuliff, 5940 Haverford Avenue, will install plumbing in four houses at 63rd and Callowhill Streets

and in nine houses at Callowhill and Gross Streets for E. Carroll, owner.

M. J. Kennedy & Co., 6313 Stenton Avenue, will install plumbing in the residence of Mrs. E. Ott, 7318 Germantown Avenue.

E. C. Struse, 119 Green Lane Manayunk, has the contract for plumbing in the property at Pechin St. and Leverington Avenue for J. Swaysa, owner.

NEWS FROM PITTSBURGH AND VICINITY.

Master Plumbers in the Greater Pittsburgh district are an active lot of fellows just now, all due to the fact that building activity in Pittsburgh and vicinity has not been as great in years. The removal of the Fifth Avenue Hump district is creating no end of new work, and some of these contracts are running into money fast.

There are no large office buildings going up in the district just now, but the largest contract upon which work has been started is the new addition to the Ft. Pitt Hotel. It is reported among contractors this week that a $1,000,000 hotel is to be built in Smithfield Street on the site of the old Griswold soon, and that the task of razing the present building will be started within a few months.

In the suburban district there is any amount of new home construction and these plumbing contracts vary from $1,000 or more down to $100 or less. It is the volume of little work that is making the plumbers in this district busy this season.

The plumbing business of Kohne Bros., of this city, has been chartered with a capital stock of $10,000. The company does an extensive and progressive business in the Hazlewood district.

Notice has been given by Attorney John E. Laughlin, of the Oliver Building, that the partnership heretofore existing between John Fitzpatrick and W. Ed. Morrison, under the firm name of the Iron City Plumbing Co., 408 Third Avenue, has been dissolved by mutual consent. Mr. Morrison has retired from the business, which will be continued by Mr. Fitzpatrick, who is one of the best known plumbers in the Greater Pittsburgh district.

NEWS FROM WISCONSIN.

La Crosse.—The common council committee has endorsed the construction of a sewer from West Avenue south, east on Redfield Street to the school house on Fifteenth Street. The extension of the Third Street line from La Crosse Street to the La Crosse river was also approved.

Stoughton.—The school board has closed the bids for the installing of three steam heating plants in three of the school buildings. The Old Central school will be remodeled and a plant installed. The board of public works, consisting of the street assessment committee exercising such duties, has closed bids for the construction of additional sewers in this city. The work will be done in what is known as District I.

Eau Claire.—Local plumbers will soon be busy installing plumbing and making sewer connections in various places in the Tenth ward. Petitions have been received by the common council for sewers in various streets, and the council has recommended a trunk sewer in Center, Summit, McDonough and Spring Streets and Belleview Avenue across the right-of-way of the railroad and into the Eau Claire river.

Kenosha.—The street assessment opened bids for the construction of 2,600 feet 42-inch and 4,856 feet 36-inch sewers, 23 manholes and a protection for the outlet in the lake. Three bids for the work were received from Robert Nelson, N. F. Reichert and Johnson & Thompson, all of Racine. Nelson's bid was the lowest at $64,160. New bids may be asked for. Christ Johnson received a contract for a sewer in Strong and Charles Streets and Johnson & Thompson for a sewer in Edward Street.

Milwaukee.—Martin Plehn, county clerk, has closed bids for constructing a septic tank at the new Milwaukee County School of Agriculture and Domestic Economy, Wauwatosa. This will be part of the sewerage system to be installed at the school.

NEWS FROM THE PACIFIC COAST.

San Francisco.

A great deal of uncertainty has attended the recent readjustment of freight tariffs which has been announced to go into effect on September second, and there is much complaint from Coast jobbers at the Pacific terminals. The general feeling is that the railroads have discriminated unfairly against the plumbing supply trade, and to induce the railroads to delay the proposed change, a formal protest has been made by the traffic bureau of the San Francisco Chamber of Commerce. The objection of local jobbers is not so much against the increase in the tariffs, which will be from twenty to twenty-five per cent on enamelware goods, the commodities radically affected, as the suddenness of the change. The wholesalers, as well as the manufacturers, received no preliminary notification of an impending readjustment and they only learned of it when the facts were published in the newspapers. As jobbers must often anticipate their requirements six months ahead, this means the possibility of considerable financial loss on goods now ordered for future delivery. Of course a great amount of plumbing supplies, notably pipe, usually is shipped here by water via Cape Horn or the Isthmus, yet even if the water rates are not increased, the change in the railroad rates should not be introduced before the matter has been given a thorough investigation, say the local parties interested. They say the railroad made the change without consulting either the manufacturer or the jobber and as a result the new classification is very unsatisfactory. Instead of its being an advantage to ship enameled goods in mixed lots in a car, as the new ruling will permit, this is a decided disadvantage in that the best use cannot be made of the space in the car and that the liability to damage is greatly increased. If the proposed rates are to hold, in order to make the situation right with the Coast terminals, the railroad will have to readjust the back hauls, that is, the rates from the Coast to interior points. In any event the Coast dealers wish more time to study out the details of the matter, and ask for a reasonable delay in the establishment of the new tariffs. How much the new rates will affect the jobbing business here is problematical as yet, but in view of the present water rates it is not thought that the market will be much restricted. The new transcontinental rates to intermediate points which have been put into effect may result in the establishment of more jobbing houses in the interior and will perhaps compel large Coast concerns to open branch houses at advantageous points. F. G. Athearn, manager of the Bureau of Economics for the Southern Pacific, thus defends the new rates: "After going thoroughly over the tariffs, I consider that the readjustment is the best that could be arrived at for both the shipper and the carrier, taking into consideration the law."

The Wolverine Brass Works has a most progressive policy and no opportunity to exploit its products on the Coast is ever neglected. At the two big conventions of plumbers, one held at Calgary, Alberta, Canada, and at the national convention at Salt Lake City, both in July, this concern had attractive exhibits. Mr. Lamond, manager of the San Francisco office, reports that the company's business on the Coast is steadily increasing and that their recent raise in the price of the heavier brass fixtures has not appreciably affected their market.

Bids on the heating and ventilating work for the new high school at Hayward, Cal., will be opened on August 23rd.

Kiernan & O'Brien have been awarded the plumbing, gas fitting and sewering contracts on two residences at Leavenworth and Greenwich streets, put up by the Greenwich Terrace Householders' Association. Amount of contracts, $4,563.

The General Engineering Co. has been given the contract for the steam heating system and domestic water supply, including all piping, pipe covering, radiators, etc., on the new seven-story building on Market St., J. D. Phelan, owner. Amount, $2,575.

John McIntyre, who has been engaged in the plumbing business at Taft, Cal., for the past two years, has discontinued his establishment and is looking for a new location in the northern part of the State.

Henry Collins, proprietor of a plumbing establishment

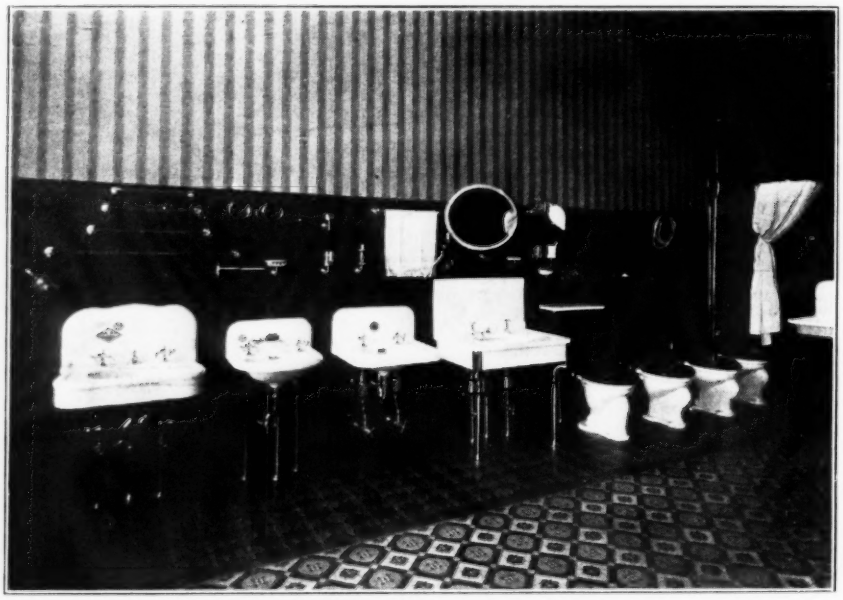
at Sausalito, was the victim of an automobile accident on the cliffs overlooking the ocean near Bolinas, Cal., on August 13. His automobile leaped from the road and rolled down a forty foot incline, carrying Collins with it. His injuries will probably prove fatal.

All bids for the installing of a heating plant in the Placer County high school at Auburn, Cal., have been rejected by the supervisors as the figures were considerably higher than the estimate given by the engineer who drew up the plans.

George Barrett and Fred F. Taylor have bought out the plumbing and tinning business of F. C. Booth, at Douglas, Ariz. The concern will now be known as the Douglas Plumbing & Tinning Co.

AN UP-TO-DATE PLUMBING AND HEATING ESTABLISHMENT.

The accompanying illustration shows a corner of the modernly equipped display room of the Arthur W. Murray Co., of Hoopeston, Ill. This progressive plumbing and heating concern believes in keeping posted and abreast of the times on sanitation and sanitary methods. All their work is guaranteed, and they have built up a good reputation and an extensive trade by using only quality goods.



A Corner in the Showroom of the A. W. Murray Co., at Hoopeston, Ill.

NEW BUSINESS VENTURES.

Winchester, Mass.—The J. A. Laraway Co. has been incorporated with a capital of $5,000 to conduct a general plumbing business. The incorporators are: J. A. Laraway, William H. Stimson and Fred Joy.

Springfield, Mass.—Articles of incorporation have been filed by the John D. Cox Co. to engage in a general plumbing business. The capitalization is $10,000. The officers of the company are: John D. Cox, Walter B. Russell and Burdette M. Bancroft.

Dayton, O.—Samuel J. Hoerner, the well-known plumber at 320-22 W. Third Street, and Chas. D. Bidleman have formed a partnership under the firm name of Samuel J. Hoerner & Co. for the purpose of carrying on a plumbing and steam fitting business. The new company will continue business at the former location.

Plainfield, N. J.—The American Plumbing and Heating Co. is the style of a firm just incorporated for the purpose of conducting a general plumbing business. The capital is $60,000. The incorporators are: A. H. White, Seagate, N. Y.; T. J. Van Wagner, Roswell Park; and A. Williams, 60 Sandford Ave., Plainfield.

CONTRACTS AWARDED.

Spokane, Wash.—Contract for improving the plumbing system of the Palouse city school has been awarded to the Arnold-Evans Plumbing Co., of this city, for $2,400. The work will begin at once and will be completed by Sept. 5.

Cleveland, O.—Contract for furnishing and installing the plumbing in the new Marshall building under course of construction on the Public Square, has been awarded to the Brainard Co.

Anaconda, Mont.—The board of education has awarded the contract for plumbing and heating incidental to the remodeling of the Central school building to J. A. Hasley. His bid was $4,925.

Philadelphia, Pa.—Thompson Bros. have secured the contract to install a central heating plant at St. Vincent's Home, 70th Street and Woodland Avenue, which will cost more than $10,000.

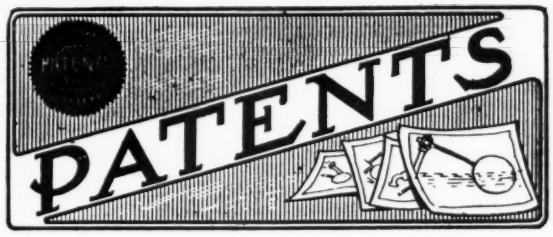
Crete, Nebr.—Earnest & Baker have secured the contract to install the plumbing system in the Masonic hall in this city.

Altoona, Pa.—Contract to install a modern steam plant for heating the building and swimming pool of the new Y. M. C. A. building has been awarded to Mulch Bros.

Utica, N. Y.—Being the lowest of several bidders, the Thomas Breen Co., of this city, has secured the contract for heating and ventilating the Holland Patent high school building, for $2,370.

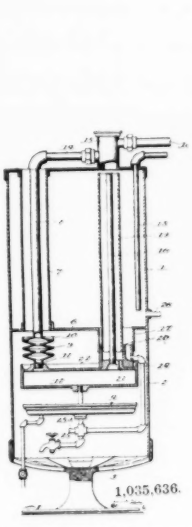
Denver, Col.—The Wallace Plumbing Co. has moved its plumbing and heating establishment to Tremont Place, which is centrally located and most convenient for the company's customers.

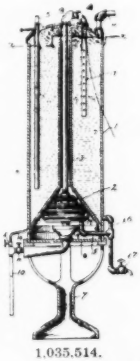
Chicago, Ill.—R. T. Lord, 4010 West Harrison Street, has just completed the installation of a new one-pipe heating system in J. R. Taylor's residence at Evanston, Ill. This was the fourth large job of that kind, which he has done this season.

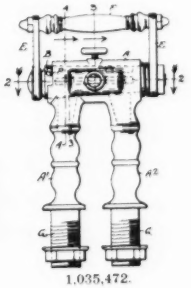


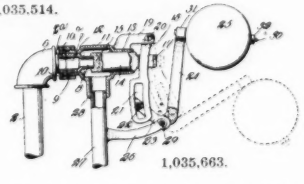
Plumbing Department.

1,035,636. Water-Heater. Michael J. Quinn, Chicago, Ill. The combination of a tank having a depending water leg, a skirt depending from the tank and surrounding said water leg, a disk-like water container disposed within the skirt, a conduit intermediate the lower portion of the water leg and said container, a hot water tube communicating with said container and extending up through the water leg and into the tank to a point adjacent the upper end thereof, a tube, of larger diameter than the water tube, surrounding the said water tube and arranged in the water leg and extending to a point above the water tube and open at its upper end, a flue extending vertically through the tank and open at its upper and lower ends a plurality of superposed annular water containers arranged above and connected with the disk-like container and also arranged below and in vertical alinement with the flue, a hot water tube connected with the uppermost of the annular water containers and extending vertically through the flue and having a lateral arm above the tank and a T-portion the lower arm of which is arranged above and


1,035,636.


1,035,514.


1,035,472.

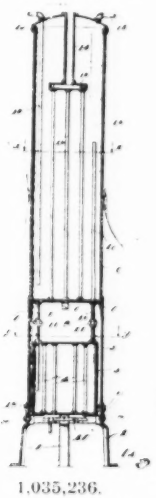

1,035,663.

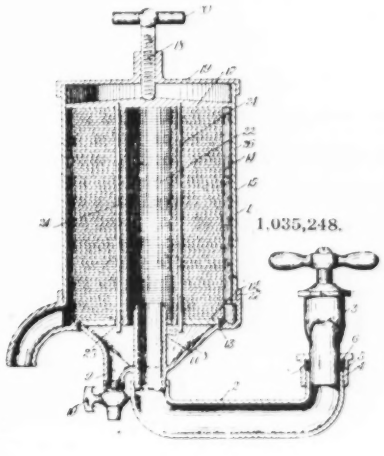
in vertical alinement with the first-named hot water tube, means for supplying water to the tank, and means arranged within the skirt for heating the disk-like water container and the annular water containers; the said disk-like water container and the uppermost of the annular water containers being each provided with an upstanding marginal flange.

1,035,514. Combination Kitchen-Boiler. Joseph Antonuccio, Fruitvale, Cal. In a combination kitchen boiler, a boiler shell having a conical bottom, a flue extending through the boiler from the top of said conical bottom, a cold water supply pipe for said boiler leading to a point adjacent the bottom thereof, a hot water outlet pipe connected with the boiler at the top thereof, a heating drum immediately below the conical bottom, a gas burner for heating said drum, a supply pipe for the heating drum, and an outlet pipe for said drum, said outlet pipe extending entirely through the flue in the boiler and downwardly into said boiler to a point about the middle thereof, said pipe also having a plurality of openings therein, as set forth.

1,035,472. Faucet. Gustave Rogge, Detroit, Mich. A faucet, having in combination, a hollow casing provided with a pair of intakes, an outlet and a threaded perforation, a set screw engaging the threaded perforation, a plug rotatable in said casing, and provided with a cut-away portion adapted to connect the outlet and one intake, and a cut-away portion adapted to connect the outlet and the other intake, the said plug being provided with a slot into which the set screw may be turned, the said cut-away portions being so arranged with respect to the slot that turning the set screw into the slot will prevent communication between one of the intakes and the outlet, substantially as described.

1,035,663. Valve. Arthur B. Utley, Springfield, Mo. In combination with the tank and the supply pipe leading upwardly through the bottom thereof and opening laterally at its top and having an annular external rib at its outer end, a reducing sleeve having its large end abutting against the end of the pipe, said sleeve having an external annular rib at the said end, a T having its ends reduced, one of the opposite ends fitting over the large end of the reducing sleeve and abutting against the rib, and a union nut having an internal annular rib engaging the rib of the pipe and threaded at its opposite end on to the adjacent end of the T, the small end of the reducing sleeve extending into the body of the T, a valve plug slidable in the other reduced end of the T and adapted to engage the small end of the reducing sleeve to close the same, the lateral opening of the T being downward, a discharge pipe connected therewith and opening near the bottom of the tank, means for operating the valve, said means comprising a lever pivoted at its upper end, the plug having a vertical opening for receiving the lever loosely, said lever having a longitudinal slot in its lower end, an elbow lever pivoted below the valve, a roller on one of the arms of the elbow lever and moving in the slot, and a float connected with the other arm.

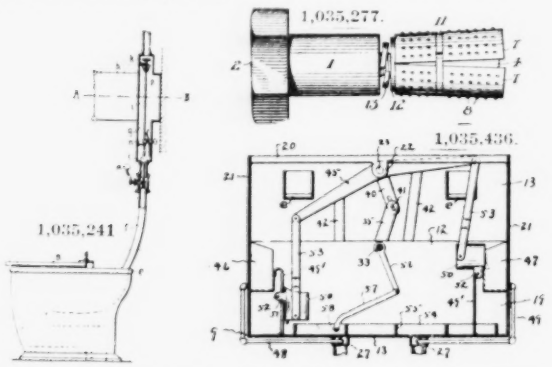

1,035,236.


1,035,248.

1,035,236. Water-Heating Apparatus. Louis J. Rissling and John C. Rissling, Chicago, Ill. A water-heating apparatus comprising upper and lower superposed water chambers arranged with a space between them; a pipe leading from the lower portion of the upper chamber into the lower portion of the lower chamber; a pipe leading from the upper portion of the lower chamber into the upper portion of the upper chamber; fire tubes extending through said chambers; a water supply pipe leading into the upper portion of the upper chamber and extending downwardly therein to the lower portion thereof, said pipe being substantially in alinement with the pipe leading from the lower portion of the upper chamber into the lower portion of the lower chamber; means for withdrawing water from the upper portion of the upper chamber, said withdrawing means being arranged substantially in alinement with the pipe leading from the upper portion of the lower chamber into the upper portion of the upper chamber; and a heating element under the lower chamber, substantially as described.

1,035,248. Filter. Eugene Seavey, New York, N. Y.

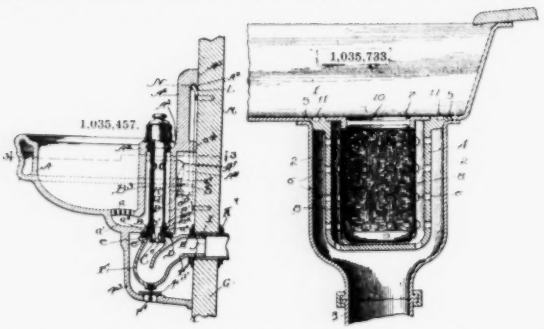
The combination with a casing, of a series of disks arranged in a stack face to face, each of the said disks having a plurality of openings therein, the openings in the disks when they are stacked being registering whereby continuous internal passages are provided in the stack, the said disks being of less magnitude than the said casing whereby an annular passage is formed around said stack, together with means for engaging some of the said passages for holding the disks in fixed position whereby when fluid is admitted through one of the passages it may be filtered by the said disks, the fluid leaving the filter through the said annular passage.



1,035,241. Flushing Water-Closets. Friedrich Ruppel, Baden, Germany. In a flushing apparatus, in combination, a tank having an inlet and an outlet, a rod, inlet and outlet valves fixed thereon, said valves being normally positioned to close said outlet and open said inlet, a projection on said rod, means for moving said rod to close said inlet and open said outlet, spring-controlled means adapted to engage said projection for holding said rod in its moved position, and a float guided in its movements by said rod for rendering said holding means inoperative as the tank empties, whereby said rod will be returned to its normal position.

1,035,277. Expansible Bolt. Paul Veres, Cleveland, Ohio. In an expansible bolt, a bolt body having one end thereof provided with a head, an exteriorly screw threaded stem carried by the opposite end of said body and of less diameter than said body, a conical-shaped nut screwed upon said stem and having flat faces, tapering jaws having the outer sides thereof provided with prongs, a split band retaining said jaws in engagement with said nut, a washer arranged upon said stem between the inner end of said jaws and the end of said body, and a nut locking device interposed between the end of said body and said washer.

1,035,436. Water-Softening Apparatus. Frederick C. Hanson, Omaha, Nebr. In a water softening apparatus,



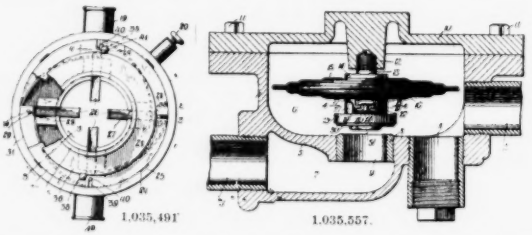
the combination with an oscillatory shaft, a spout mounted upon said shaft and tiltable therewith, a water supply pipe disposed above said spout, a pair of compartments into which said spout alternately discharges, a rocking lever of T form secured to the oscillatory shaft, a second oscillatory shaft, arms extending from said second oscillatory shaft upon opposite sides thereof, buckets pivotally mounted at the outer ends of said arms, links pivotally connected to the outer portions of the T arms and to the lower inner corners of said buckets, and means for actuating the second oscillatory shaft from the first named oscillatory shaft and in unison therewith.

1,035,457. Plumbing-Fixture. Patrick J. Madden, Chicago, Ill. In a plumbing fixture, the combination with the fixture proper having at its back a downwardly presented bearing surface and a wall against which the back of the fixture bears, of a support for the fixture, said support having a bracket carried by the wall, and having a slot elongated transversely to the general plane of the wall, a bolt carried by the bracket, and laterally adjustable in said slot toward or from the wall, and a nut carried by the bolt and interposed between said bracket and the fixture, said nut being adapted to engage the downwardly presented bearing surface on the fixture.

1,035,733. Sink-Strainer. Clyde A. Pierce, San Francisco, Cal. In a sink strainer, the combination of a perforated bucket having an annular flange at its top, a semicircular recess in the flange, a semicircular handle pivotally secured to the flange and adapted to lie within the recess, an inner bucket composed of a flanged ring adapted to seat within the perforated bucket at the top thereof, a bar extending diametrically across the ring, a cylindrical screen body depending from the flanged ring and a solid bottom secured to the cylindrical screen body in the manner described and for the purpose set forth.

Heating Department.

1,035,491. Pipe-Threading Machine. Samuel M. Stough and Harry C. Larick, Frankfort, Ind. A thread cutting tool including a head having a tapered bore, a radially disposed radially movable die in said bore, means for moving said die longitudinally of said bore, a radially movable eccentric engaged transversely across the outer end of said die and having an outer curved edge bearing upon the wall of said bore, and having an inner curved edge eccentrically disposed to said outer edge, and a rib on said inner edge engaging the outer end of said die and slidably attaching the die to said eccentric.



1,035,557. Steam-Trap. Clayton Aubra Dunham, Marshalltown, Iowa. A steam trap comprising a casing provided with a bridge forming inlet and outlet chambers, a cap detachably secured to said casing, an expansion disk detachably mounted on said cap and provided with a hub having a slot and oppositely-disposed ledges, a valve having a stud provided with a rounded head adapted to have a limited rocking movement within said slot, on said ledges, a retaining plate provided with projections extending opposite the outer wall of said hub and spaced slightly therefrom, a cup mounted on said stud, a bearing ring arranged within said cup, and means for binding said stud, retaining plate and cup together.

Same Thing.

Judge—"Were you present when the trouble started between the man and his wife?"

Witness—"Yessir, I was at their weddin', ef dat's whur yo' means, sah."—"Technical World Magazine."

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